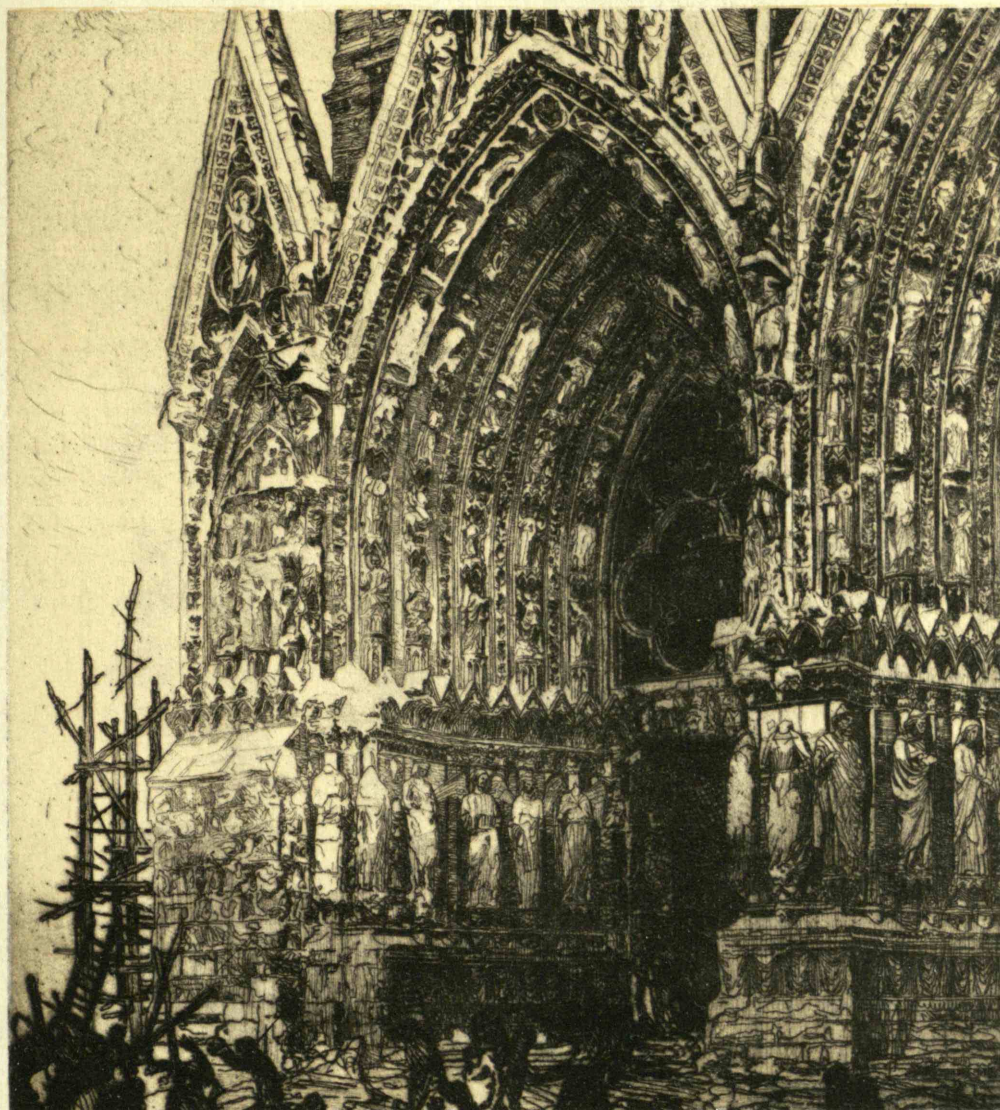


THE TECHNOLOGY REVIEW



Jacques Carlu
1918

RELATING TO THE MASSACHUSETTS
INSTITUTE OF TECHNOLOGY
MARCH • • • 1929

technology review

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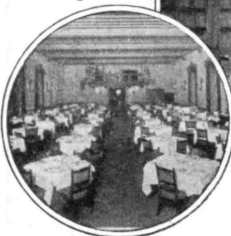
Ready for a dip in the pool



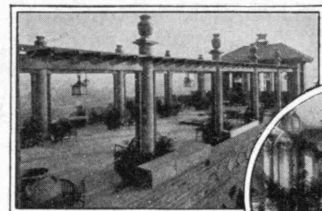
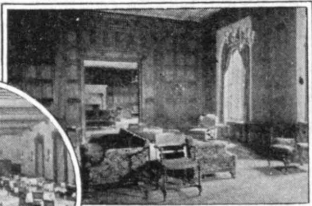
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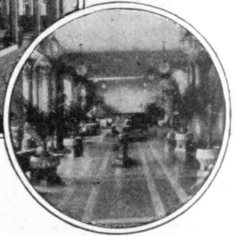


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The Solarium

The roof garden on the South Wing



THE TABULAR VIEW

GORDON B. WILKES, '11, has been an Associate Professor of Industrial Physics at the Institute since 1924. After he was graduated from Technology in 1911 he became an Assistant in Heat Measurements, and his present position is the outcome of seventeen years of work in the Department of Physics. This year he was appointed by the Society of Arts to give one of the Popular Science Lectures. He chose for his subject "Artificial Cold and Its Applications," and his lecture with its demonstrations aroused so much interest that The Review Editors importuned him to rearrange it as an article.

PAUL H. WILSON, the author of the article on calendar simplification, has been for twenty years with the Graton and Knight Company in Worcester, Mass. He now holds the positions of Clerk of its Corporation and Secretary of its Board of Directors, as well as that of instructor in cost accounting at Northeastern College of Worcester. The use of the International Fixed Calendar with its arrangement of thirteen equal months in the firm of the Graton and Knight Company for the past eleven years has brought Mr. Wilson to a firm belief in its advantages from a business point of view. HARRY W. TYLER, '84, has been a member of the Department of Mathematics since his graduation in 1884 and its Head since 1901. As President of the Faculty Club it is the delight of all members to hear his humorous and felicitous impromptu introductions and addresses. This year, as Secretary of the American Association of University Professors, he has leave of absence for the second term to establish a headquarters for the Association in Washington.

NORBERT WIENER, Assistant Professor of Mathematics at Technology since 1924, was a very young man when he won his three degrees. Tufts gave him an A.B. in 1909, when he was fourteen years old, and Harvard gave him an A.M. in 1912 and a Ph.D. in 1913. Now that the real name of the writer, S. S. Van Dine, has been revealed as Willard Huntington Wright, all suspicion has been removed from Professor Wiener, although at one time it looked to a great many people as if he might be the author of the famous murder stories that have, by their erudition and brilliancy, thrown violently out of joint the noses of contemporary mystery-story writers. The name of JACQUES CARLU is well known to Technology men since his coming to Rogers Building as Professor of Architectural Design in the Department of Architecture. Exhibitions held of his work have contained no finer example than the etching on the cover for this month of the entrance porch of Reims Cathedral. The Editors are indebted to William Emerson, Head of the Department of Architecture for the loan of this etching.

JAMES PHINNEY MUNROE, '82, who died February 2, was the Editor of The Review during the years 1900-1908. To be sure this post was not the only, or even
(Concluded on page 262)



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THE TABULAR VIEW

(Continued from page 261)

the most important, activity of his fruitful career of which Dr. Tyler writes on page 271. Yet to The Review the years during which he guided its destinies were all important for they were the formative years of its adolescence. And it was under him that The Review's position in the Institute's life became assured. Nor did his interest cease when he relinquished the active burden to ISAAC W. LITCHFIELD, '85, twenty years ago for, until his final illness, he continued to be a most valued contributor, one who would accept an irksome assignment as a duty and derive pleasure from delivering finished copy on the exact date he promised it, disregarding both personal inconvenience and the multitude of other demands upon his time.

Truly, as he wrote in The Review's 25th Anniversary Number in January, 1924, The Review during the eight years of his editorship was "flesh of my flesh." With ARTHUR D. LITTLE, '85, C. FRANK ALLEN, '72, and WALTER B. SNOW, '82, he had brought the magazine into being and although two Editors, ARTHUR T. HOPKINS, '97, and WALTER HUMPHREYS, '97, preceded him, but five numbers had been issued when he took the helm. As he put it:

"I adopted the waif at the age of one, when it was moribund with financial starvation, and with little experience and less leisure, agreed to provide for it a home in my business office. This was on the dubious supposition that translation from the academic groves of Newbury Street to the harsh atmosphere of trade might keep the poor thing alive. In the very first number of that second volume, the editorial page — which, as the English say, 'was me' — entered an alibi by protesting that 'no child is interesting till it is three years old,' believing, of course, that the anaemic orphan would be off my hands ere then. MARK TWAIN (or was it BRET HARTE?) defined a mining camp gentleman as one who 'never shook his mother.' Perhaps it was a kindred hyper-delicacy that postponed my shaking The Review till it was nearly ten years old."

Despite the tribulations he referred to his task by concluding: "It (the Institute) has been a vast cooperative activity such as the educational world but seldom sees. Yet upon certain compelling forces it is possible to place a distinguishing finger; and even one so closely involved as the Third Editor is justified in declaring that among those truly creative forces has stood high The Technology Review. . . ."

Be that as it many, Munroe was, to the present Editors, an ideal and an inspiration. For it was Munroe who imbued The Review with a vital spirit. After all, any magazine like The Review — at least any successful one — is a living thing; it is not mere ink on paper, bound and mailed periodically to be absorbed by its subscribers because it may do them good like a breakfast food or a patent medicine.

Those at present responsible for The Review mourn the passing of a great editor.

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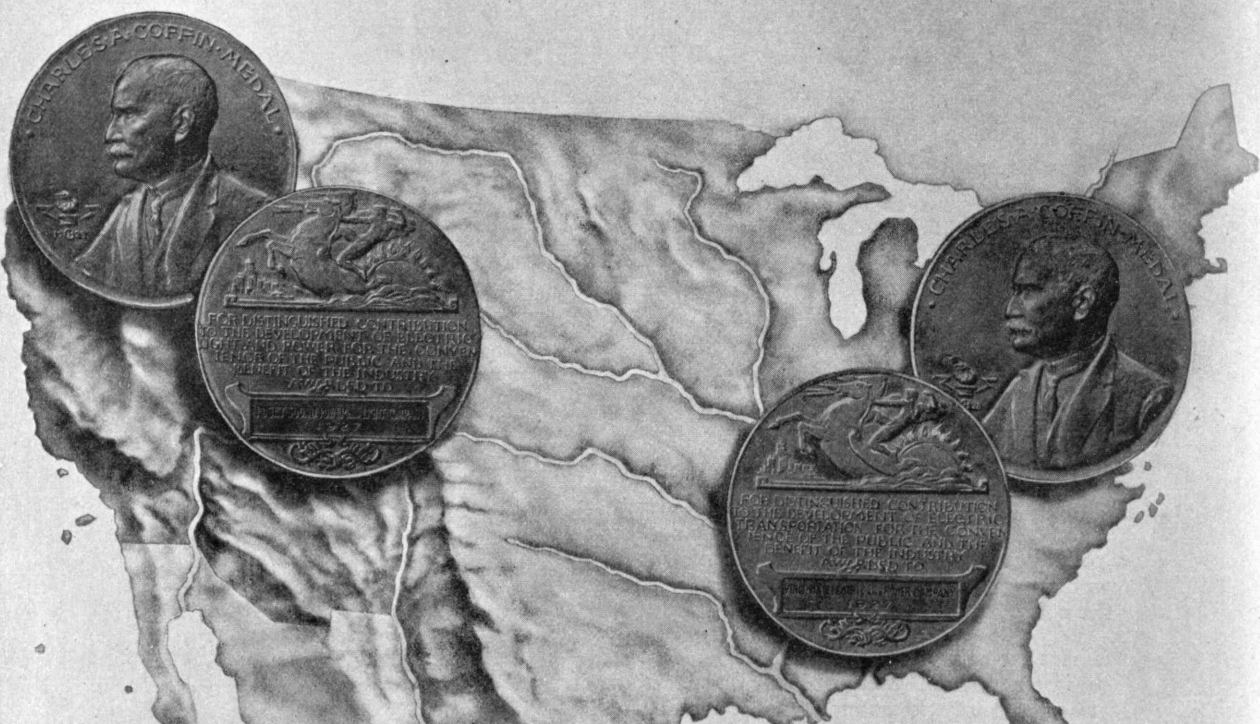
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The TECHNOLOGY REVIEW

VOLUME 31

MARCH, 1929

NUMBER 5

ARTIFICIAL COLD

Some modern cooling methods and their applications

BY GORDON B. WILKES '11

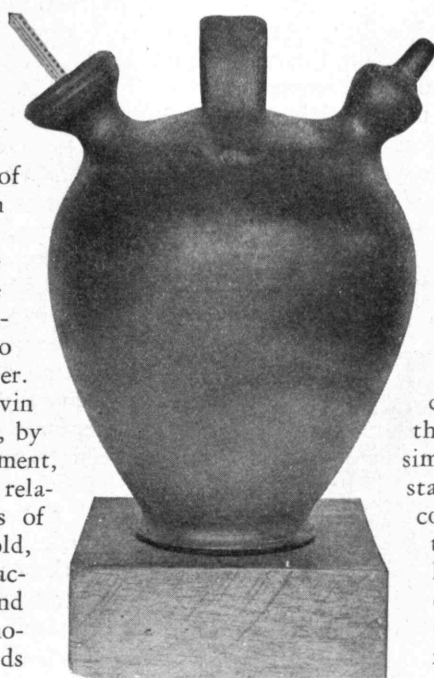
THE appearance of refrigerating machinery for domestic use has created among laymen an abiding interest in the mechanical methods of artificial cooling. Domestic refrigeration of one kind or another is here to stay and it is probable that an extensive development of cooling and ventilating machinery for the home is just around the corner. Already many of our theatres and public halls have installed devices for cooling the air during the warm months, and only a short time ago a combined heating and air cooling unit was advertised for private residences. If the temperature of our living quarters drops eight or ten degrees to around 60° F., we feel uncomfortable and start the heating system; but if a warm day arrives in summer with a temperature twenty or thirty degrees above 70° F., we are uncomfortable because we have had no easy means of cooling the air. I can see no reason why, during the next few years, it will not become a rather common practice in the more expensive homes to have some means of cooling the air in summer as well as a means of heating it to a comfortable temperature during winter.

Some fifty-odd years ago, Lord Kelvin (Sir William Thomson) demonstrated, by means of a simple lecture-table experiment, that the sensation of cold was a purely relative matter. He placed three basins of water on the table: one hot, one ice cold, and the third at room temperature. Placing his right hand in the hot water and his left in the cold water for a few moments, he quickly transferred both hands to the basin with water at room temperature. In attempting to describe the sensation he was forced to conclude that either his left hand or his right hand was deceiving him, for the water felt cold to his right and warm to his left hand.

Since, therefore, the sensation of cold is largely a relative matter, we shall assume for our purposes that cold signifies any temperature below 70° F., ordinary room temperature. Let us also agree to understand that all of the temperatures referred to are in degrees on the Fahrenheit scale, the one we use for most work outside the laboratory.

Primitive man found that an over supply of meat from a successful hunt could be preserved for a longer period of time if he kept it in an underground cavern, a well, or in the water from a spring or other relatively cool place.

In a temperate climate like that in New England, the temperature of the air may vary as much as forty degrees in a day and as much as 100 degrees throughout the year. The daily variation affects underground temperatures only to a slight extent at a depth of two or three feet, while the annual variation is lost at a depth of twenty-five to fifty feet. There the temperature remains practically constant throughout the year and usually approximates the average yearly temperature of the surface. For this reason, water from deep wells usually has a temperature that is the same throughout the year; similarly, spring water is at almost constant temperature because this water comes from a considerable depth below the ground surface. Any one who has had the opportunity to visit caves in different seasons, nearly always finds them warm in winter and cool in summer. This and the common method of placing water pipes a few feet underground to prevent freezing in cold weather, illustrate the fact that the variation in air temperature soon disappears at a sufficient depth underground.



A PRIMITIVE WATER COOLER.
FOR CENTURIES PEOPLES IN
HOT, DRY CLIMATES USED
POROUS EARTHENWARE JUGS
FOR COOLING WATER. THIS
ONE WAS MADE IN SPAIN

Nearly every one is familiar with the use of ice and salt to produce temperatures low enough to freeze ice cream. If ice and salt are mixed in proper proportions, it is not difficult to produce a temperature of zero degrees Fahrenheit, and by using calcium chloride in place of salt, considerably lower temperatures may be attained. There are many other substances that may be used with ice to produce temperatures below the freezing point of water, such as ammonium nitrate, alcohol, hydrochloric acid, and so on. The use of nitre (potassium nitrate) with snow or ice has long been known. As early as 1550 it is said the Roman nobles cooled their wines by snow and nitre.

In temperate climates, ice has for many years been used to produce low temperatures. Its melting point is 32°F . which represents the lowest temperature that one can expect to reach with the use of ice alone, but the ordinary domestic ice box is more frequently in the neighborhood of 50°F . as a recent survey of a large number of refrigerators determined. Despite the enormous sales of electrical and gas-heated refrigerators in recent years, ice will continue to be used, probably in somewhat lesser quantities, for many years to come, because of the low cost and the lack of many minor troubles that are bound to arise from any mechanical unit.

THE cooling effect of evaporation has been utilized for centuries by the peoples living in hot, dry climates who store their drinking water in porous earthenware jars. Moisture oozes through the walls to the outside of the vessel where it evaporates, the effect of which is sufficient to lower the temperature of the water from ten to twenty degrees below that of the surrounding air. This simple primitive expedient, strangely enough, contains

the germ of the principle upon which are based all of the mechanical refrigeration systems now in domestic use. The principle is this: that evaporation — or what is the

same thing, the transition from the liquid to the vapor state — requires a large amount of heat energy, which must be supplied by the liquid itself or the immediate surroundings. If one is boiling water, most of the heat energy comes from the heated air around the vessel and the air is thereby cooled. If water is evaporating from the surface of an earthenware water jar, the heat comes from the vessel and the surrounding air, both of which are cooled in the process.

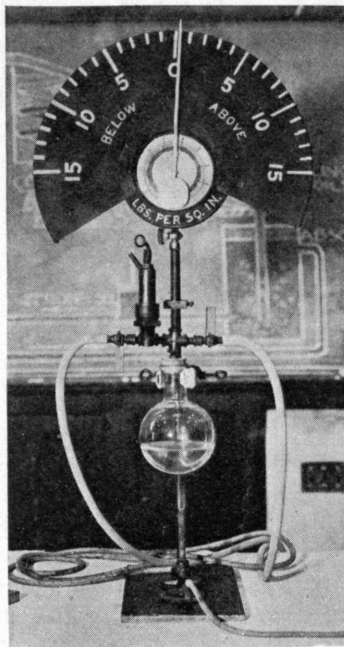
One must also recognize the fact that the temperature at which a liquid boils (its "boiling point") depends upon the pressure. With the atmospheric pressure as it is at sea level, water boils at approximately 212°F ., but if the pressure be increased twenty times, the boiling point is increased to about 417°F . If the pressure be sufficiently lowered, one can make water boil at room temperature or even at 32° , the ordinary freezing point.

This we can readily demonstrate on the lecture table by repeating what is known as Leslie's Experiment. If we

place some water at room temperature in a thermos bottle and reduce the pressure until the water boils, heat will be drawn from the remaining water (since little can come from the surroundings) and it will become cooler. Then if we continue to reduce the pressure in order to keep the water boiling, it will soon reach a temperature of 32°F . and some of the water will be converted into ice, inasmuch as water does not normally exist in the liquid state at a temperature below 32°F .

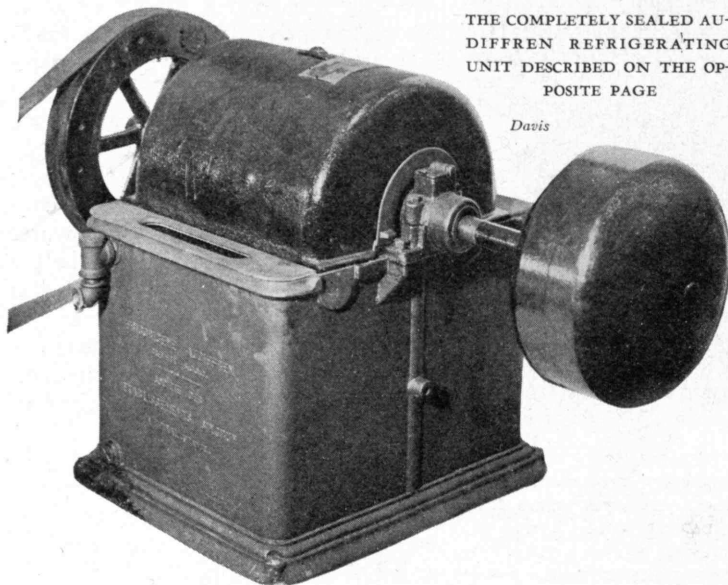
The boiling points of all other liquids vary with the pressure and consequently all that has been said in regard to water applies equally well to ammonia, sulphur dioxide, carbon dioxide, and so on; only, of course, the temperature-pressure conditions may be very different from those of water. This principle of cooling by evaporation or boiling of various liquids is, as I have already mentioned, the foundation upon which nearly all of our refrigerating machines are constructed.

Refrigerating units for home use are, in general, of two different types: those using a small electrically driven pump, the compression type; and those using heat generated by a gas or kerosene oil burner, the absorption type. The operating principle of each is simple, the former particularly so. A suitable liquid (called the refrigerant) such as ammonia, sulphur dioxide, carbon dioxide, methyl chloride, or ethyl chloride, is placed in the cooling coil inside the refrigerator cabinet, where it is made to "boil" by having the pressure upon it reduced with the motor-driven pump. This pump receives the vapor from



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THE COMPLETELY SEALED AU-
DIFFREN REFRIGERATING
UNIT DESCRIBED ON THE OP-
POSITE PAGE

the coil at low pressure, compresses it, and passes it along to either an air-cooled or a water-cooled condenser. The compressing of the vapor increases its temperature so that when it reaches the condenser the high pressure and the cooling action of the condenser are enough to liquefy it. The liquid refrigerant is then directed back into the cooling coil in the refrigerator, and the cycle is repeated.

Electrical refrigeration is very similar to a steam heating plant in a private residence. There water is boiled over the fire box and the steam or water vapor carried by pipes to radiators where on condensing it gives up heat to the room. The condensed steam then returns to the boiler where the cycle is repeated. In other words, the boiling of the water keeps the boiler relatively cool and thus acts as a refrigerating system for the boiler that would otherwise become very hot. Heat is transferred from the boiler to the radiators in steam heating, while in electrical refrigeration, heat is transferred from the refrigerator to the condenser coils in much the same way. In steam heating, the water is made to boil by the addition of heat, while in electrical refrigeration the liquid is made to boil by the reduction in pressure caused by the pump.

The Audiffren unit, the first entirely self-contained machine, is interesting. It was invented by a French priest, Abbé Audiffren, some twenty-five years ago and placed on a commercial basis in this country in 1911. The unit resembles a large dumb-bell, with one ball, containing the compressor, revolving in cooling water and with the other ball used as an expansion or cooling chamber. This latter ball can be immersed in brine or water for cooling purposes. The unit is charged with a mixture of sulphur dioxide and lubricating oil at the factory which is sufficient for many years use. The photograph shows one of the original French machines that was sent to Technology's Heat Measurements Laboratory in the summer of 1911. This particular machine has been in intermittent service for the past eighteen years, operating perfectly, and it has never been opened for inspection or repairs.

"Refrigeration by heat" makes an interesting slogan, but the layman rarely understands the principles back of the absorption method of refrigeration, although more than fifty years ago small domestic refrigeration units using this principle were sold to the public. Cold water absorbs enormous quantities of ammonia gas, but if a solution of ammonia and water be heated much of the ammonia can be driven out of solution. Ferdinand Carré, many years ago, used two containers connected by a pipe, in one of which a strong solution of ammonia and water

was placed. Adding heat to this solution by means of a charcoal fire, the ammonia was driven out and as the other container was kept cool by immersing it in water, the ammonia gas would condense there in increasing quantities until most of the ammonia was evolved. Now if the weak solution were cooled, the ammonia would be reabsorbed, thus reducing the pressure on the other chamber so that the ammonia liquid boiled, producing a considerable cooling effect. This type of machine is still

being sold and if one is willing to heat the unit for about an hour each day with kerosene or gas, it will keep a refrigerator at a useful temperature for the preservation of food.

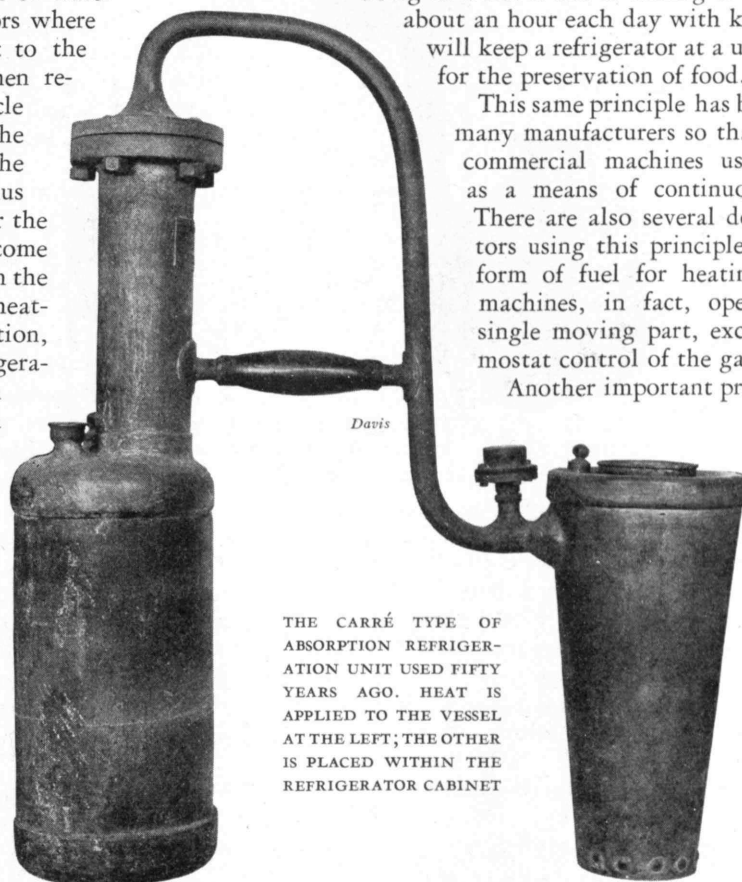
This same principle has been developed by many manufacturers so that there are large commercial machines using this process as a means of continuous refrigeration. There are also several domestic refrigerators using this principle with gas as the form of fuel for heating: one of these machines, in fact, operates without a single moving part, except for the thermostat control of the gas valve.

Another important principle of cooling

is the Joule-Thompson Effect or the cooling of a gas by expansion from a high to a low pressure. If the gas can be made to do work while expanding, a still greater cooling effect will be produced and the economy of operation will be increased since the

gas in expanding can be made to help compress the incoming gas. There are some refrigerating machines based upon this principle, using air as the refrigerant.

CARBON dioxide is a by-product of many industries and consequently is an inexpensive gas. It is usually sold in the liquid form under a pressure of about 850 pounds per square inch. Nearly all substances can exist in three different states, solid, liquid or gaseous, provided the temperature and pressure conditions are suitable. If sufficient heat is added to solid iron, it can be converted into the liquid state and if the temperature could be raised still higher, a point would be reached where it would be converted into iron vapor. We are all familiar with the three states of water such as steam, water and ice; and within the past fifty years we have learned that the so-called permanent gases can be converted to liquids or even solids provided the temperature is sufficiently low and the pressure is suitable. Now if a cylinder of liquid carbon dioxide under 850 pounds per square inch pressure is inverted so that when the valve is



THE CARRÉ TYPE OF ABSORPTION REFRIGERATION UNIT USED FIFTY YEARS AGO. HEAT IS APPLIED TO THE VESSEL AT THE LEFT; THE OTHER IS PLACED WITHIN THE REFRIGERATOR CABINET

opened, only liquid will escape, you will find that there is a great cooling effect due to the vaporization of the liquid since carbon dioxide cannot exist as a liquid at room temperature and under atmospheric pressure. This cooling effect is so great that some of the escaping liquid is cooled to such a temperature that it can no longer exist as a liquid but is converted to the solid state or carbon dioxide snow. If a strong cloth bag is tied over the outlet from the tank, the gas will pass through the bag but the solid or snow can be collected. This snow is at a temperature of 109°F . below zero and for many years has been used as a cooling agent in laboratory work.

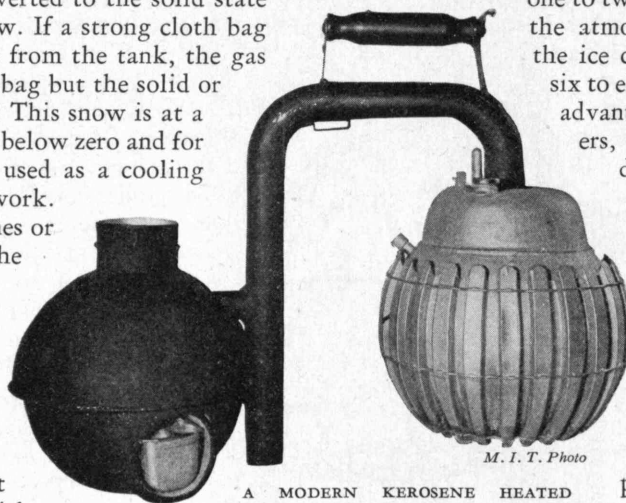
The snow itself sublimates or goes directly from the solid to the gaseous state under atmospheric pressure and does not make very good thermal contact with materials that one wishes to cool; consequently, it is frequently mixed with alcohol or ether to overcome this disadvantage of poor contact.

Within the last few years, methods have been devised to use this carbon dioxide snow industrially. The snow as formed above can be compressed in hydraulic presses so as to form a dense, hard cake with a specific gravity of about 1.1 or slightly heavier than water. This dense snow or "dry ice" as it is called, because it goes directly into a gas from the solid, is being used to a considerable extent for packing ice cream or frozen fish where the temperature must be kept

considerably below the freezing point. One large manufacturer of ice cream in Cambridge, Mass., is shipping 75 per cent of his ice cream packed in carbon dioxide snow rather than with the old salt and ice mixture. One gallon of ice cream is placed in a corrugated cardboard box and then a small paper bag is placed on top containing from one to two pounds of "dry ice" depending upon the atmospheric temperature. This will keep the ice cream in excellent condition for from six to eight hours, and there are many obvious advantages such as less bulk to the containers, inexpensive containers that can be discarded, thus saving a collection trip, and no wet mixture of salt and ice required.

Ice cream can be shipped long distances by this method and frozen fish have remained in freight cars for over five days without attention when packed with this material. It has been recently stated that in shipping ice cream from Philadelphia to New York City, 200 pounds of "dry ice" at from five to ten cents per pound has replaced 3,000 pounds of water ice and 600 pounds of salt. In this case 3,400 pounds of extra freight is avoided besides the other

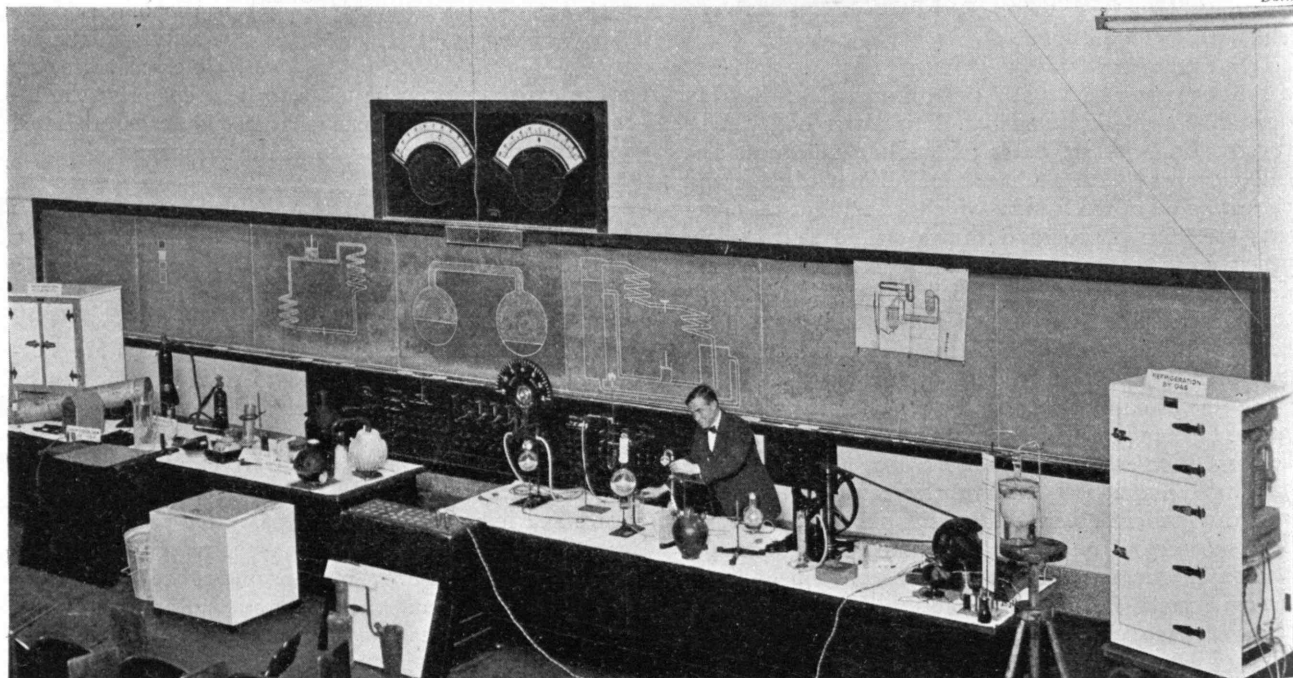
advantages. Dry ice lasts exceptionally well even when exposed to a temperature of 70°F . Recently a twenty-five pound cake was left on the lecture table for twenty-four hours exposed to room temperature and even after that period of time two or three pounds were still left. When packed in insulated containers, it will, of course, last longer. It is reported that a New York apartment house is using it in all its refrigerators. (*Continued on page 312*)



M. I. T. Photo

A MODERN KEROSENE HEATED
ABSORPTION PROCESS UNIT. THE
BLACK BALL IS PLACED WITHIN THE
CABINET

PROFESSOR WILKES WITH THE ELABORATE LECTURE-TABLE DEMONSTRATION HE ARRANGED FOR A POPULAR SCIENCE LECTURE ON ARTIFICIAL COOLING



CALENDAR SIMPLIFICATION

A thirteen-month calendar that would be a boon to business

BY PAUL H. WILSON

FOR nearly 2000 years the Western World has been employing a calendar that reflects in its ineptness and cumbersomeness the vanity of two Caesars and the superstitions of their time. Unaware of its capricious history, a few people have believed our calendar to be of divine origin, others have regarded it as a sacred legacy of the past, and a majority of us have accepted it with all its inconveniences and deficiencies as a custom beyond change and an arrangement beyond improvement.

It has remained for modern business to challenge taboos and to point out the need for a fixed and systematic calendar that will be the same from year to year and embody equal divisions. The great use of statistics and the concomitant necessity of their being compiled for comparable and equal periods to make them more meaningful has contributed to this growing demand for a better form. Such a calendar has been contrived, and the writer's experience in its use for effecting simplicity in the internal accounting of a large corporation has led him to study the whole calendar situation and to compile some facts about our present arrangement and the proposed one of thirteen months.

EGYPTIAN astronomers first arrived at an approximate figure for the true length of the year, 365.25 days, and with admirable efficiency they divided it into twelve months of thirty days each. The remaining five days, not included in any month, they set aside as holidays. Their months they divided into three equal periods. This Egyptian calendar resembles in many respects the new one which is now being proposed for the use of all nations of the world.

Julius Caesar, upon conquering Egypt, decided to adopt this calendar for use in the Roman Empire, but meddled with the monthly divisions by distributing the five extra days throughout the year. He added one day to every other month, *i.e.*, January, March, May, July, September, and November, "because odd numbers were lucky," and took one day away from February. Thus the really scientific Egyptian calendar was mutilated.

When Augustus Caesar came into power he, too, rearranged the calendar, and for utterly selfish reasons. So proud was he of his birth month, August, and

so jealous that Julius should have more days in his birth month, July, that he put thirty-one days into August and removed the twenty-ninth day from the month of February. Some objection was raised at the time by property owners, because of unequal quarters caused by this change, so he made another shift in the calendar by moving September 31 to October 31.

This caused two months of thirty-one days to come together so that a further juggle was made by moving November 31 to December 31.

In 325 A.D. the Christian Council at Nicaea took a hand in changing the date of Easter to follow the fluctuating date of the first full moon after March 21. This had been deemed necessary since the pilgrims needed moonlight to aid them on their yearly wanderings to Easter ceremonies held in different cities. Consequently Easter varied with the Easter Sunday moon between the dates of March 22 and April 25, and it still does even today.

The Julian calendar was based on the inaccurate Egyptian figure of 365.25 days for the length of the year. Consequently after a period of several hundred years it became noticeable that the vernal equinox was moving away from its calendar date. Pope Gregory XII (1406-1409), keenly perceiving that a new and more precise calendar would confer *éclat* on his pontificate, sponsored a new calendar length with provisions for a leap year, but did not alter the length of the months. This form, now called the

Gregorian, became operative in Christian

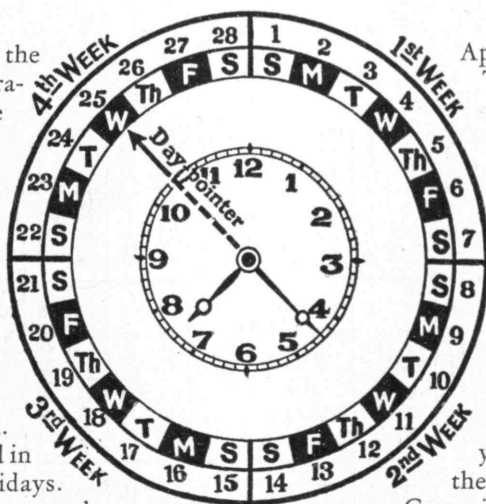
countries in 1582.

So the calendar has remained almost unchallenged until the present decade when the League of Nations appointed a Committee on Inquiry, composed of representatives appointed by the Roman Catholic, Eastern Orthodox and Protestant authorities, astronomers, and the International Chamber of Commerce, which represented business organizations throughout the world. That committee had to consider 185 distinct and separate proposals for calendar simplification received from thirty-three nations in nearly as many languages.

The most feasible and scientific suggestion was the one proposed by Moses B. Cotsworth, an Englishman, born in 1859. After being graduated from school, he entered

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

ABOVE: EVERY MONTH OF THE PROPOSED CALENDAR HAS TWENTY-EIGHT DAYS, EVERY DAY FALLING ON THE SAME DATE. CLOCK CALENDARS CONSEQUENTLY MAY BE DEVISED AS SHOWN BELOW



the employment of the Northeastern Railway of England, working in the office of the chief traffic manager. Later he became a special investigator and advisor to the management of the railway company, with the duty of explaining the variations in the income and operating expenses of the company each month. He found great difficulty in making these comparisons, because of the inequalities in the length of months. As traffic on a railroad is always lighter on Sunday than on other days of the week, a month containing five Sundays shows a decrease in earnings in comparison with a month containing four Sundays. The great amount of time spent by Mr. Cotsworth in eliminating the variations caused by these defects in the calendar led him to a study of the present Gregorian calendar. From this study came the suggestion of the present proposed calendar change. It was not until Mr. George Eastman of the Eastman Kodak Company and Life Member of the Institute's Corporation, unselfishly devoted his wealth and time to the advancement of this reform that any progress was made.

The proposed calendar provides for thirteen equal months of twenty-eight days, each month to have four

weeks of seven days, each week to start on Sunday morning and to end on Saturday night. The one extra day in an ordinary year is to be dated December 29, and is to be without a day of the week name, unless it may be called Year Day. It may be used as an extra Sabbath or holiday. In leap years the second extra day is to be inserted at the end of June, dated June 29, and called Leap Day.

Included in this reform is the plan of having all holidays, with the exception of Good Friday, come on Monday. This change will benefit all mankind.

The hitherto wandering date of Easter would be stabilized as the Sunday after the second Saturday in April as recommended by the League of Nations. This stabilization would be of great advantage to educational, judicial, and commercial interests. The British Parliament has gone so far as to enact a bill in August, 1928, to provide for the stabilization of Easter as stated above, although the bill will not go into effect until the churches have been given an opportunity to express their attitude. England, then, plans to stabilize Easter as soon as an international conference has considered the new arrangement and acted on the question. (Continued on page 314)

Table for the Conversion of Dates

G—GREGORIAN CALENDAR

I—INTERNATIONAL FIXED CALENDAR

THIS SHOWS THE 13 MONTHS "INTERNATIONAL FIXED CALENDAR," WITH ITS FIXED WEEK-DAY NAMES IN THE LEFT COLUMN, FOR THE PROPOSED 28-DATES REPEATING EVERY MONTH. PRESENT DATES ARE DOWN THE "G" SIDE OF EACH MONTH'S COLUMN, WITH THE INTERNATIONAL DATES DOWN EACH MONTH'S RIGHT COLUMN, "I."

THE + AND - FIGURES UNDER EACH MONTH'S NAME SHOW THE NUMBERS OF DAYS THE INTERNATIONAL CALENDAR WOULD ADVANCE OR REcede EACH PRESENT MONTH'S DATES.

WEEK-DAYS Never Changed	1 JAN. Same	2 FEB. + 3	3 MAR. + 3	4 APR. + 6	5 MAY + 8	6 JUN. + 11	7 SOL. + 13	8 JUL. - 15	9 AUG. - 12	10 SEP. - 9	11 OCT. - 7	12 NOV. - 4	13 DEC. - 2
	G. I. Jan. Jan.	G. I. Jan. Feb.	G. I. Feb. Mar.	G. I. Mar. Apr.	G. I. Apr. May	G. I. May Jun.	G. I. Jun. Sol.	G. I. Jul. Jul.	G. I. Aug. Aug.	G. I. Sep. Sep.	G. I. Oct. Oct.	G. I. Nov. Nov.	G. I. Dec. Dec.
Sun.	1 1	29 1	26 1	26 1	23 1	21 1	18 1	16 1	13 1	10 1	8 1	5 1	3 1
Mon.	2 2	30 2	27 2	27 2	24 2	22 2	19 2	17 2	14 2	11 2	9 2	6 2	4 2
Tue.	3 3	31 3	28 3	28 3	25 3	23 3	20 3	18 3	15 3	12 3	10 3	7 3	5 3
Wed.	4 4	Fe1 4	Mr1 4	29 4	26 4	24 4	21 4	19 4	16 4	13 4	11 4	8 4	6 4
Thu.	5 5	2 5	2 5	30 5	27 5	25 5	22 5	20 5	17 5	14 5	12 5	9 5	7 5
Fri.	6 6	3 6	3 6	31 6	28 6	26 6	23 6	21 6	18 6	15 6	13 6	10 6	8 6
Sat.	7 7	4 7	4 7	Ap1 7	29 7	27 7	24 7	22 7	19 7	16 7	14 7	11 7	9 7
Sun.	8 8	5 8	5 8	2 8	30 8	28 8	25 8	23 8	20 8	17 8	15 8	12 8	10 8
Mon.	9 9	6 9	6 9	3 9	Mal 9	29 9	26 9	24 9	21 9	18 9	16 9	13 9	11 9
Tue.	10 10	7 10	7 10	4 10	2 10	30 10	27 10	25 10	22 10	19 10	17 10	14 10	12 10
Wed.	11 11	8 11	8 11	5 11	3 11	31 11	28 11	26 11	23 11	20 11	18 11	15 11	13 11
Thu.	12 12	9 12	9 12	6 12	4 12	Jul 12	30 12	27 12	24 12	21 12	19 12	16 12	14 12
Fri.	13 13	10 13	10 13	7 13	5 13	2 13	30 13	28 13	25 13	22 13	20 13	17 13	15 13
Sat.	14 14	11 14	11 14	8 14	6 14	3 14	Jy1 14	29 14	26 14	23 14	21 14	18 14	16 14
Sun.	15 15	12 15	12 15	9 15	7 15	4 15	2 15	30 15	27 15	24 15	22 15	19 15	17 15
Mon.	16 16	13 16	13 16	10 16	8 16	5 16	3 16	31 16	28 16	25 16	23 16	20 16	18 16
Tue.	17 17	14 17	14 17	11 17	9 17	6 17	4 17	Aug 17	29 17	26 17	24 17	21 17	19 17
Wed.	18 18	15 18	15 18	12 18	10 18	7 18	5 18	2 18	30 18	27 18	25 18	22 18	20 18
Thu.	19 19	16 19	16 19	13 19	11 19	8 19	6 19	3 19	31 19	28 19	26 19	23 19	21 19
Fri.	20 20	17 20	17 20	14 20	12 20	9 20	7 20	4 20	Sel 20	29 20	27 20	24 20	22 20
Sat.	21 21	18 21	18 21	15 21	13 21	10 21	8 21	5 21	2 21	30 21	28 21	25 21	23 21
Sun.	22 22	19 22	19 22	16 22	14 22	11 22	9 22	6 22	3 22	Oct 22	29 22	26 22	C Same-day Christmas
Mon.	23 23	20 23	20 23	17 23	15 23	12 23	10 23	7 23	4 23	2 23	30 23	27 23	24 22
Tue.	24 24	21 24	21 24	18 24	16 24	13 24	11 24	8 24	5 24	3 24	31 24	28 24	25c 23
Wed.	25 25	22 25	22 25	19 25	17 25	14 25	12 25	9 25	6 25	4 25	Nv1 25	29 25	26 24
Thu.	26 26	23 26	23 26	20 26	18 26	15 26	13 26	10 26	7 26	5 26	2 26	30 26	27 25
Fri.	27 27	24 27	24 27	21 27	19 27	16 27	14 27	11 27	8 27	6 27	3 27	Del 27	28 26
Sat.	28 28	25 28	25 28	22 28	20 28	17 *28	15 28	12 28	9 28	7 28	4 28	2 28	29 27
													30 28
													31 *29 Year-Day

* Each year's last day to be YEAR-DAY, dated December 29, as an 8th day in that week. Leap-Day, February 29, to be moved to the BETTER date June 29. The Quarter-Years would end with their 13th weeks on April 7, Sol 14, and September 21, at exactly $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ of their last months; thereby facilitating accounting while giving the many advantages of 28-day months.

MURDER AND MATHEMATICS

A brilliantly written detective story keeps buoyantly and entertainingly afloat over scientific deeps

BY NORBERT WIENER

EDITOR'S NOTE: The Review goes somewhat afield in reviewing a current mystery story, but S. S. Van Dine's "The Bishop Murder Case" has aroused so much discussion among physicists and mathematicians that The Review has sought out one of them, an outstanding authority in mathematics, and engaged him to comment on this literary phenomenon, deeming it eminently worthy of such treatment. For the benefit of those few who not yet have read any of the extraordinary series that Van Dine has written, attention is called to the titles that have preceded the one at present under review: "The Benson Murder Case" (1926), "The Canary Murder Case" (1927), and "The Greene Murder Case" (1928), each one of which is an excursion, not only into the aesthetics of murder on a grand scale, but into some stimulating field of knowledge, mainly science and art.

And further, for the benefit of the remaining Americans who have read Van Dine but possibly have not yet heard that his identity has been revealed, attention is directed to the name, Willard Huntington Wright, which will be found in "Who's Who in America" at the head of a lengthy record of accomplishments varying from musical compositions to discussions on modern art. It is not to be wondered at that the author has collected a large library of mathematical books and has used them understandingly.

This commentary of Dr. Wiener displaces this month the usual department, "Books."



THE NEW MAESTRO OF MYSTERY STORIES
DREW THIS CARICATURE OF HIMSELF.
HE IS NOT MEPHISTOPHELES

IN so far as the layman has any idea of us mathematicians, his idea may scarcely be said to be complimentary. If he knows nothing of mathematics he regards us as a parcel of computers and number-jugglers, and upon meeting us immediately regales us with long tales of the elaborate sums his seven-year-old boy can do in his head. If he knows a little more about us, he is merely filled with disgust that a man with two efficient hands and two efficient legs should condescend to such piddling little work as getting one formula from another or solving a differential equation. It is true that this contempt is not wholly free from an admixture of an equally exaggerated awe. However, to the layman we stand entirely outside of the pale of baseball fans, go-getters, and other members of humanity.

Now it is true that in our inner circles there are many tales current which would go a long way towards removing this stigma were they only known to the public. We mathematicians are arrant gossips (one of my mathematical colleagues has entreated me not to reveal this to the public) and when two of us get together the invariable subject matter of conversation is the short-comings of a

third mathematician. We have current among us such merry tales as that of the Professor and the Lady Baggage Thief; that of the Senior Wrangler and What he Said to the Proctor at the Door of Great Saint Mary's; that of the Bibulous Scientist and the Check that Went Astray; and many others of the same sort. Unfortunately for our

general standing, however, we have not participated in any major crime, at least since the days of Cardano, and as you all know that was a very long time ago. Of course, I have often felt like murdering some colleague who has beaten me to a big killing, but I have never yet had the full courage of my convictions. Some day perhaps I'll do it.

It is, therefore, with a feeling of delight, with a sense of emancipation, that we read the new thriller of S. S. Van Dine, "The Bishop Murder Case" (Scribner's). Here a mathematician is the culprit. Among his victims he numbers a harmless youth with a penchant for archery, a hunchback genius of a colleague, a graduate student with no more objectionableness about him than the cognomen of Johnny Sprigg, and a widowed opera singer in retirement. Now you see what professional jealousy will do! It is not a matter of accident that the criminal is a mathematician, for the whole atmosphere in which he moves

is heavy with mathematics. Riemann-Christoffel symbols, tensors, and abstruse chess moves fly about like leaves in an autumn storm or communications from the dead in a spiritualistic séance. To the best of my knowledge and belief there is more mathematics per page in this book than is to be found in the whole length of any previously existing novel.

Now when an author goes into mathematics for the purpose of furnishing a setting for a detective story or a tale of mystery it can generally be taken for granted that his mathematics is bad mathematics. Not so with Mr. Van Dine. The combined efforts of a large part of the Mathematics and Physics Departments at the Institute have been devoted to the detection of errors in Mr. Van Dine's work with a distressingly meager yield of results.* It is, of course, not to be considered that mathematics is the only subject of which Mr. Van Dine gives an accurate account. His documentation is always good, and so far as

*Note for Mr. Van Dine's benefit: Why does Drukker make those incorrect references to general relativity in Poincaré and Minkowski?

I have been able to ascertain from my medical and psychiatric friends, his documentation in these directions is fully as perfect as in our own.

He is particularly good on the psycho-analysis of the mathematician. As everybody knows, a mathematician wrote "Alice in Wonderland" and a prominent mathematical physicist is responsible for the interesting little book, "How to Tell the Birds from the Flowers." So you see that mathematical jokes exist and are strange and wonderful things. Now if a mathematical joker were to turn criminal I have not the slightest doubt that he would do so in the manner so ably indicated by Mr. Van Dine. He is quite explicit about this and his analysis of the state of mind of the mathematician and of the sort of crime that a mathematical criminal would commit strikes me as thoroughly authentic.

It is a great relief, surprise, and pleasure to find the detective story treated as a serious work of art, worthy of the attention of an intelligent reader. Of course we all know that Poe did exactly this and we all know the multitude of detective stories which, to say the least, are nothing for the authors to be ashamed of; but a combination of a skillfully worked out plot, an excellent literary style, a perfect documentation, a characterization fully adequate to the needs of the tale, and a general balance and finish such as we find in the stories of Mr. Van Dine is a great rarity.

Distinguishing his work from that of Poe, there is one important feature. Poe has a love of horror for horror's sake, and indeed a psychiatrist could call this by a very short and ugly name. In Mr. Van Dine's books, while horror is and must be one of the colors on his palette, it is never overstressed and is used simply and solely to excite the reader's emotion to a point where he feels, himself justified in the intellectual effort of finding the culprit. This intellectual effort is well worth while, for Mr. Van Dine plays scrupulously fair with the reader. On finishing one of his stories one always has the feeling that one should have seen the solution some place back in the second installment. This feeling is generally complicated by the chagrin at not having seen it until the penultimate installment. With such a punctilio of fairness, the book constitutes a thoroughly profitable occupation for an intelligent reader. This is one of the cases where true value and enjoyableness are not in conflict.

THESE paragraphs have been written on the strength of a reading of all but the last installment of Van Dine's new tale. As objective evidence of the difficulty of picking a criminal, let me here record to my eternal disgrace my present opinion of the identity of the Bishop murderer. Sigurd Arnesson, a Norwegian and the adopted son of Professor Dillard of the Mathematics Department of Columbia University, is himself a member of the same Department. Drukker, a hunchback and doted son of a neurotic mother, has strong mathematical interests and is apparently on the point of anticipating the DeBroglie-Schrödinger-Heisenberg quantum theory. I say "ap-

parently" for there is some evidence in the story that Drukker's mathematical attainments are not as great as they seem to be. In the picture there are also a Joseph Cochrane Robin and Sperling (by the way, a Technology man), both amateur archers of high ability, and an amateur astronomer and chess player, Pardee. The professor has a niece, Belle, who seems to have attracted the interest of most of the available male population. There is good reason to believe that, of the entire crowd of mathematicians, Arnesson is the one outstanding genius. He has a deep contempt for mankind and indeed for anything on less than a cosmic scale. For some reason or other he wishes to get hold of a book of notes in the possession of Drukker. My own suspicion is that Drukker cribbed these notes, but that will come out in the next number. In order to eliminate Mr. Drukker from existence without subjecting his own body to the passage of high tension electricity, he finds it necessary to invent a stage setting. The brilliant idea comes to him: why not conceal this crime by the commission of a series of others with an apparent purpose entirely different from that of the actual deed? This purpose is probably suggested to him by the names of Cock Robin and Sparrow, for this is the English translation of *Sperling*. Accordingly Mr. Robin is found transfixed by an arrow and there is every prospect that Mr. Sparrow must expiate the crime in his own person. In a similar manner, Johnny Sprigg, a student of Arnesson, is found with his parietal bone pierced by a leaden bullet — in accordance with the best traditions of Mother Goose. Soon afterwards Mr. Drukker departs from this our world in the rôle of Humpty Dumpty, and his mother is scared to death in some incompletely explained way.

For such a series of crimes the public needs a criminal. Who can make a better criminal than Pardee? As we have said, Pardee has a weakness for chess, and accordingly each crime is advertised in the papers by a note sent in the name of the Bishop. Now, having fixed all that on a criminal, it is advisable to prevent him from giving evidence of his innocence. Why should he, therefore, not commit suicide? And accordingly Mr. Pardee performs what has every appearance of being a felony *de se*.

Such is human vanity. I have since finished the tale, and — but why should I spoil it for you? And to add to it all, I have the chagrin of learning that some very correct deductions which I had made, communicated by letter to Mr. Van Dine himself, and afterwards rejected by me as being false, are true. That is the worst of this Van Dine fellow. After you guess the answer, he adds a few turns and quirks to the story — quite legitimately, of course — which drive you completely from your base. Suffice it to say that in my opinion there is no person who can read through this story and fail to wander from the correct path, — and several times at that. The ending is admirably logical and excellently written. But why *didn't* I stick to my first guess?

JAMES P. MUNROE, '82 (1862-1929)

An appreciation of the late Secretary of the Corporation who died on February 2

By HARRY W. TYLER, '84

WHEN James P. Munroe, '82, died on February 2, the Institute lost one of the major figures of its history, and the community a man whose life was singularly rich and many-sided, and constantly devoted to the public weal.

Munroe came to Technology as a student from Lexington, Mass., where his family had been long and prominently identified with the life and traditions of the town. Undoubtedly many of the qualities that later distinguished his life had their roots in the sound community life which surrounded his youth. Particularly his philosophy of public service, his robust belief in the value of education, and his emphasis on the fundamentals of democratic liberalism might be traced to the civic and political ideals that long have flourished in this New England community.

When he entered the Institute in 1878, President John D. Runkle had just relinquished the Presidency, a load too heavy longer to be borne by him. It was a critical and stressful period, but there were men to meet it and students like Munroe to derive inspiration from it. Munroe, in fact, was particularly fortunate in the Faculty members with whom he came in contact: Osborne, for instance, in Mathematics, Cross and Holman in Physics, Nichols and Wing in Chemistry, Atkinson in English, and Richards in Mining Engineering. President Rogers, recalled from well-earned retirement to difficult leadership, after welcoming Walker as his successor in 1881, laid down labor and life together during the graduation of Munroe's Class in 1882. It seemed fitting thirty-four years later that, in the same place where Rogers stood, Munroe delivered his eloquent farewell to Rogers Building.

Munroe's official connection with Technology began immediately following his graduation when he became an assistant to President Walker as Secretary of the

Faculty. Two years later he succeeded Wells in that post and soon demonstrated that he was a quick, capable, and tireless helper in whom President Walker could safely place implicit confidence and increasing responsibility.

He served until 1889 when the death of a brother compelled him to go into business with his father. The educational apprenticeship he served during that period and his fortunate marriage to Miss Katherine Langdon were determining influences on his later career.

At no time, however, did he become completely detached from the life and interests of Technology. A glance at the offices which he held is eloquent testimony to his zeal and industry in its behalf: President of the Alumni Association, 1894-1897; Life Member of the Corporation, 1897-1929; Secretary of the Corporation, 1909-1929; Managing Editor of *The Technology Review*, 1889-1908; President of the Technology Club, 1896-1904; a member of the Alumni Council from its inception until his death; and chairman of the Alumni Association Committee on Historical Collection.

His editorship of *The Technology Review*, commented on by the present Editors on page 261, was a record of incessant and fruitful labor continued for ten years. In the words of Arthur D. Little, '85, one of the members of the original committee in charge of its founding and publication, "In no uncertain or merely complimentary sense, James P. Munroe *was* *The Technology Review*. To his intimate knowledge of the traditions of the Institute, his glowing enthusiasm for the hopes and aims of its great founder, his close familiarity with conditions and needs as then existing, and his clear vision of the trend and course of the Institute's development was due the early recognition of those ideals toward which *The Review* has consistently and continuously aimed."



FOR ADDITIONAL TREATMENT OF MR. MUNROE'S DISTINGUISHED CAREER, SEE PAGES 261 AND 287

It was during his editorship that the Harvard merger controversy came up, and it afforded Mr. Munroe an opportunity for loyal service in organizing and energizing the interest of the Alumni toward preserving the independence of the Institute. In later efforts to put its financial future on a more assured basis, Munroe bore a leading and honorable part. The Alumni interest that was then engendered had another fortunate outcome in the adoption of the plan now in operation for the nomination by the Alumni of Term Members of the Corporation, a plan vigorously espoused by Mr. Munroe. With Francis H. Williams, '73, a Fellow Life Member of the Corporation, he conceived the idea of the income fund which has proved a valuable device in the financing of the Institute, and he later took a leading part in the Educational Endowment Fund Campaign of 1919-1920. From the time of the organization of the Technology Club in Boston in 1896 until 1904 he was its President and moving spirit, a service that has been commemorated by the Joseph Decamp portrait that now hangs in the Faculty Dining Room at Walker Memorial. He also was chairman of the Visiting Committee of the Department of English and History, and his theories of education have influenced the work of this Department.

FEW men ever more adequately and persuasively voiced the ideals and philosophy of the Institute than did he. In his books, in magazine articles, in addresses, and in conversation, he was able to speak convincingly and well about the past, present, and future of Technology. In a very real sense he was a Thomas Huxley to Technology, an able expositor of its theories and a factor contributing to its evolution. His most valuable and elaborate addition to Institute literature was "The Life of Francis Amasa Walker" (1923), a noble personal tribute to our great leader.

From his student days onward he preached this faith he held in the efficacy of the educational methods which were in use at the Institute, and this is reflected in his many contributions to the literature of education. Besides articles and addresses, his books include "The Educational Ideal" (1895); "Adventures of an Army Nurse" (1903); "New Demands in Education" (1912); and "The New England Conscience" (1915).

In his "New Demands in Education" Munroe insisted that "the boys and girls in school are the greatest of all national resources, infinitely more important than those natural resources of which so much is heard; and the province of education is to conserve these most valuable assets. . . . The supreme aim of education, acting through homes, schools, and the community in general, should be to foster sound and capable bodies, to develop well trained minds, and to build up strong, self-reliant characters."

His ceaseless industry and literary power, defying restriction, propelled him into the leadership of active agencies interested in improving American educational methods. From 1910 to 1911 he was President of the National Society for Vocational Education, and it was logical that President Wilson in 1917 should appoint him Vice-Chairman of the new Federal Board for Vocational Education, first for one year, later for three more. Besides the important primary functions implied by its

title, the Board had also to deal in due time with the difficult problems of vocational rehabilitation of soldiers, prior to the establishment of the Veterans' Bureau in 1921. Later it developed and still maintains a national program for rehabilitation of disabled civilians. In all this constructive pioneer work under the abnormal conditions of the war and the post-war period, Munroe was active head of the Board and bore a leading and arduous share, making his home almost continuously in Washington, and carrying on, besides the work itself, the necessary and difficult elucidation of it to sorely beset legislators.

The widened range of his experiences is interestingly reflected in "The Human Factor in Education" (1920) which embodies his philosophy of various important human relations with particular reference to the new conditions following the Great War. Of particular interest in view of his intimate relations with both professors and trustees, is the chapter on College Trustees and College Faculties. "The imperative need of American college faculties, however, is not higher salaries; it is larger professional authority and more genuine freedom. These attained, the wage question will take care of itself."

Urging the importance of joint conference committees of trustees and faculties distinct from the usual executive committees of the former, he adds: "By these or some like methods, trustees and faculties must be brought more closely together unless we wish to see the growing alienation of the administrative and teaching staffs develop into a real and fatal breach. Cooperation would teach the trustees the antipodal difference between the problems of a university and those of a business corporation, and, at the same time, would show the faculty the importance of business methods and thorough organization."

In 1918 George Washington University honored Mr. Munroe by conferring upon him the degree of Doctor of Literature, and in 1919 the chapter of Phi Beta Kappa at William and Mary College conferred upon him honorary membership in that distinguished scholastic fraternity.

Since 1924 Munroe had been President of the Twentieth Century Club, presiding at its Saturday luncheons with a rare combination of wit and wisdom, holding with unruffled tact a just balance between conservatives and radicals, militarists and pacifists. Of other manifold interests and activities, for the church and for the blind, for example, others who knew more of these endeavors can speak more adequately. The Secretary of his Class, Walter B. Snow, in his notes on page 287, written before Mr. Munroe's death, presents a letter from him describing some of this work.

Of Munroe as a man, many readers of *The Review*, at any rate of the older generation, have direct knowledge. Slight in physique, and with a touch of New England reticence in manner, he was genial and gracious in personal relations, patient and courteous in discussion, clear cut without dogmatism, witty and effective in speech, eloquent when eloquence was in place. In the words of Frederic H. Fay, '93, as true in 1929 as when he used them in 1910, he was "the Institute's foremost Alumnus."



THE TREND OF AFFAIRS



Boulder Dam

ONE-THIRTEENTH of the United States, a territory larger than that of France and Italy combined, is embraced by the basin of the Colorado River. Most of this area is dependent upon irrigation from the river for the growing of crops, and the Colorado is an undependable stream. Normally its annual flow is about 17,300,000 acre feet (an acre foot being the amount of water required to cover one acre to the depth of one foot); actually it may go as low as 9,780,000 acre feet as in 1903-1904 or as high as 26,100,000 acre feet as in 1908-1909. Moreover it fluctuates from month to month.

In the Colorado Basin, according to estimates of the United States Reclamation Service, there are 7,000,000 acres of land at a proper elevation with respect to the river level to be possible of irrigation. The normal flow is sufficient to irrigate four to five million acres, but in years of drought there is only enough to irrigate half that area. Equalization of water supply by means of a storage dam or dams has been talked of for years and was the genesis of the Swing-Johnson or Boulder Canyon bill passed in December by the Congress and subsequently signed by President Coolidge.

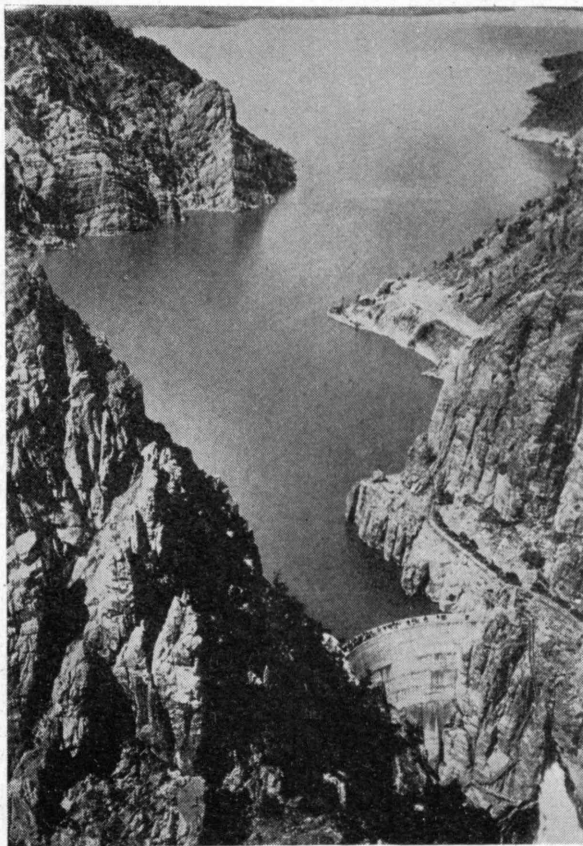
Previous to the passage of the bill, the feasibility of the project was investigated by a Board of Engineers and Geologists of which Dr. Charles P. Berkey, principal speaker at the Annual Dinner of the Alumni Association on February 16, was a member. This Board named Black Canyon, about forty miles from Las Vegas, Nev., rather than Boulder Canyon as the preferable site for a 550-foot dam which would be over 200 feet higher than any previous dam and would impound enough water to blanket Massachusetts with a layer five feet deep. It recommended a dam of the gravity type with allowable stresses as high as thirty tons per square foot.

Hitched to the project's flood control features are two items: the generation of about 1,000,000 horsepower (as much electricity as is used in the whole State of Cali-

fornia or in Illinois, including Chicago) and an all-American canal from the river to the Imperial and Coachella Valleys of California which now receive their water at the pleasure of the Mexican government.

The Board estimated the cost of the entire project as \$165,000,000 divided as follows: the dam and reservoir, \$70,600,000; power development, \$38,200,000; all-American Canal, \$38,500,000; interest during construction, \$17,700,000. Sale of the power would be expected eventually to repay the cost.

At this writing there appears little likelihood that construction work will begin in the immediate future. The Swing-Johnson bill stipulates that the project be conditional upon six of the seven basin states — Wyoming, Colorado, Utah, New Mexico, Nevada, Arizona, and California — ratifying the Colorado River Compact drawn at Santa Fé on November 24, 1922. This compact specifies the division of the water, and neither Arizona nor Utah are pleased with its provisions. To test its validity, Arizona last January authorized the filing of a suit in the United States Supreme Court alleging that it allocates to California waters rightfully belonging to Arizona.



Underwood & Underwood

SHOSHONE DAM, ONE OF THE GREAT STRUCTURES BUILT BY THE U. S. RECLAMATION SERVICE. IN CONTRAST WITH THE 550-FOOT HEIGHT OF THE PROPOSED BOULDER DAM, ITS 328-FOOT HEIGHT SEEMS PUNY

PARSIMONIOUS United States Senators back in the 1840's, actuated by the fear of more slave territory, are to blame for some of the present Colorado Basin troubles. Then the Basin was

known as the "great American desert" and John Gadsden of South Carolina was sent to Mexico by President Polk to negotiate a treaty for the purchase of a substantial area south of the Gila River to provide an all-American route for a railroad between New Orleans and Southern California.

Mexico, being in desperate financial straits, was anxious to exchange desert wasteland for gold and Minister Gadsden negotiated a treaty by which the international boundary line would start on the Gulf of California below the mouth of the Colorado River and run eastward to the Rio Grande. The purchase price was to be \$15,000,000. Northern Senators, then in the throes of anti-slavery agitation,

opposed the acquisition of additional territory which might later become part of new slave states. Pleading economy, they revised Gadsden's treaty, saved \$5,000,000 and moved the start of the boundary line to a point 100 miles north of the mouth of the Colorado. Had the Gadsden treaty not been altered, the fertile Colorado delta would today be United States territory and there would be no proposal to expend \$40,000,000 for an all-American canal to protect the productive Imperial and Coachella Valleys. The yield of land in these valleys is prodigious and their crops are earlier and more tropical than those grown elsewhere in the United States. But they are entirely dependent upon water from the river.

From an engineering standpoint there is no objection to having the waters of the Colorado flow through Mexico on their way into these valleys and to peace loving individuals the situation is merely an excellent reason for cultivating friendly relations with Mexico. But skeptical souls, including most Californians and particularly those 60,000 whose homes are in the Imperial Valley, would feel safer if the canal were all on the American side.

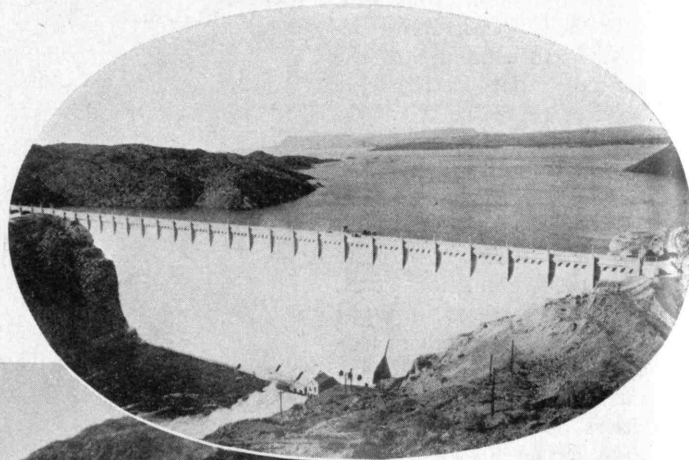
Nor is possible lack of water the only menace to these valleys. Because of its characteristics and the soil of the country through which it flows, the Colorado, like the Mississippi, is a tremendous silt carrier. This accentuates the flood problem in the lower reaches, for the bed of the river has been raised throughout centuries until it is now considerably above the surrounding territory. The annual silt discharge of the Colorado is estimated at 182,000,000 cubic yards, a volume equal to the total excavations made during the construction of the Panama Canal.

Millions of dollars have been spent by interests in the Imperial Valley to keep the river within its soft banks. All such efforts are merely makeshift arrangements,

however, and until a storage dam is built the whole valley, in places 250 feet below sea level, will be menaced with the possibility of inundation.

COMPARISON of the proposed dam in Black Canyon with existing dams reveals the magnitude of the undertaking. It would surpass by 201 feet, or sixty per cent, the Arrowrock Dam (349 feet) on the Boise River in Idaho. The Arrowrock, opened in 1915, was begun while Frederick H. Newell, '85, was Director of the United States Reclamation Service. Mr. Newell from 1902 to 1907 was chief engineer of the Service and in the latter year became its first Director, a post he held until 1914.

During his administration, four other outstanding dam projects were initiated and three of them were completed: the Roosevelt (280 feet) on the Salt River in Arizona, the Pathfinder (218 feet) on the North Platte in Nebraska and Wyoming, and the Shoshone (328 feet) in Wyoming near Cody. The Elephant Butte (306 feet) on the Rio Grande in New Mexico and Texas was not opened until 1916. All of these dams built by the Reclamation Service were for irrigation purposes.



Underwood & Underwood

OVAL: A DESOLATE COUNTRY BECAME A GARDEN SPOT WHEN THE ELEPHANT BUTTE WAS REARED IN NEW MEXICO. IT HAS THE LARGEST STORAGE CAPACITY OF ALL ARTIFICIAL RESERVOIRS

LEFT: IF DISPUTATIOUS STATES AGREE, BOULDER DAM WILL BE WEDGED IN THIS HUGE CHASM, AS DEEP AS THE WASHINGTON MONUMENT IS HIGH



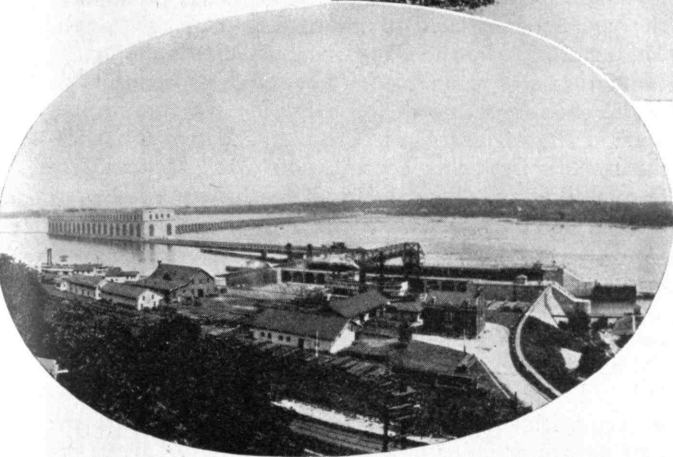
Underwood & Underwood

P. & A.

RIGHT: ROOSEVELT DAM
IN THE VALLEY OF THE
SALT RIVER, ARIZ.,
HEIGHT, 280 FEET

OVAL: WIDE-FLUNG
KEOKUK IMPOUNDING
THE MISSISSIPPI IN IOWA

Underwood & Underwood



Only three dams in India and two in Egypt exceed in length any in the United States. All five are less than 130 feet in height. The Indian ones are: the Tansa (8,800 feet), the Krishnaraja (8,600 feet), and the Poona (5,136 feet). The Assouan as completed in 1912 on the Nile is 6,400 feet long and 113 feet high. It impounds 281,338,000 gallons but plans contemplated would raise it so as to provide a storage capacity greater than that of the Elephant Butte. In the Soudan near Makwar is the Sennar Dam on the Blue Nile. It impounds a mere 140,000,000 gallons, but in length it is the dam of dams, 9,900 feet.

Electricity vs. Steam

Elephant Butte, the longest dam of those mentioned above (1,674 feet) has the largest storage capacity of any dam in the world. The new American Falls dam (4,971 feet) on the Snake River in Idaho is the longest in the United States. The Ashokan (4,650 feet) on the Catskill Watershed near Olive Bridge, New York, is second. For his work as chief engineer and later as consulting engineer of the New York Board of Water Supply which built the Ashokan and several other storage dams, J. Waldo Smith, '86, received, in 1918, the John Fritz Medal and, last January, honorary membership in the American Society of Civil Engineers was conferred upon him. Mr. Smith's various dams together provide New York City with 825,000,000 gallons of water per day.

Other long dams in the United States are: the recently completed Conowingo on the Susquehanna River (4,633 feet); the Wilson or Muscle Shoals (4,500 feet) on the Tennessee River; the Keokuk (4,360 feet) on the Mississippi. These dams in height are but 105, 142 and 53 feet respectively. The Conowingo and the Keokuk were built by Stone and Webster of which Edwin S. Webster, '88, and Charles A. Stone, '88, were the founders.

IMPORTANT among the many changes constantly taking place in American transportation methods and equipment is the increasing use of electric locomotive power. At the opening of the present year nineteen railroads already had installed or were perfecting plans for the electrification of all or part of their lines and since that time at least one more major road, the New York Central, has announced that it is considering electrifying many miles of its trackage.

The Review in January published a comparative survey of the great tunnels that have been constructed by American roads, starting with the Hoosac Tunnel of the Boston and Maine and resting for the time upon the completion in January of the Cascade Tunnel of the Great Northern. The building of these tunnels has been responsible for a part of the electrification: it is impracticable, if not impossible, to drive steam locomotives through these long bores unless they are built with elaborate ventilating equipment. In fact, seven of the nineteen have installed electrical equipment for this reason.

The remaining twelve have done so for a variety of other reasons: speedier operation over congested tracks, economical operation over heavy grades, the freeing of overhead areas adjacent to terminals, and cleanliness. The frequent assertion that electrification brings economy is not true, that is, unless qualified. Electrification makes possible a more rapid handling of trains and, where traffic is heavy, this would assuredly result in economies. The Pennsylvania, for instance, expects to speed up its freight between Philadelphia and Trenton by thirty per cent, and it would hardly be possible to handle the great number of train miles demanded by terminals such as those in New York without electrification. But where traffic is not heavy and grades are light the capital investment demanded by electrification frequently is too great to yield a saving under present conditions.

It reduces to a problem of electrifying or laying more tracks, and where one or the other is necessary, electrification is usually the more satisfactory. Another condition encouraging electrification is the development of the country's power resources, making it possible for the railroads to buy power, whereas heretofore it would have been necessary for them to generate it themselves.

The other reasons for electrification are apparent. Electric locomotives in their capacities individually are not limited to the power available in a single boiler as are steam engines; consequently they can be depended upon for more power over heavy grades. The tractive effort of an electric locomotive is constant in contrast to the varying effort of a steam locomotive as a result of its reciprocating action. Given electric and steam locomotives of equal weights, the electric will, because of its constant torque, deliver more power to the drawbar. There is also the incidental advantage of regenerative braking, now used by the Great Northern and the St. Paul, which makes the train operation much smoother on down grades, permits braking at higher speeds, and incidentally saves power.

In the installing of the 4,000 miles of electrification in this country, Technology men have played an important part. The Boston firm of Jackson and Moreland had entire charge of the Great Northern's work. Professor Dugald C. Jackson, Head of the Department of Electrical Engineering, and Edward L. Moreland, '07, are the senior partners of this firm, and their resident representatives were Ralph D. Booth, '20, and John R. Coffin, '17. This same

firm has charge of the work, finished and projected, of the Lackawanna. This firm is both planning and supervising this extensive installation. Well-known, of course, to all Technology men by virtue of his Presidency of the Alumni Association for 1926-1927, is Elisha Lee, '92, Vice-President of the Pennsylvania, which now has on its agendum a total electrification of 1,300 track miles. The chief engineer of the Northern Pacific is Bernard Blum, '04. The small but active Boston, Revere Beach and Lynn Railroad, recently electrified, has as its President and Treasurer, respectively, Gardiner F. Wells, '91, and Albert W. Hemphill, '06.

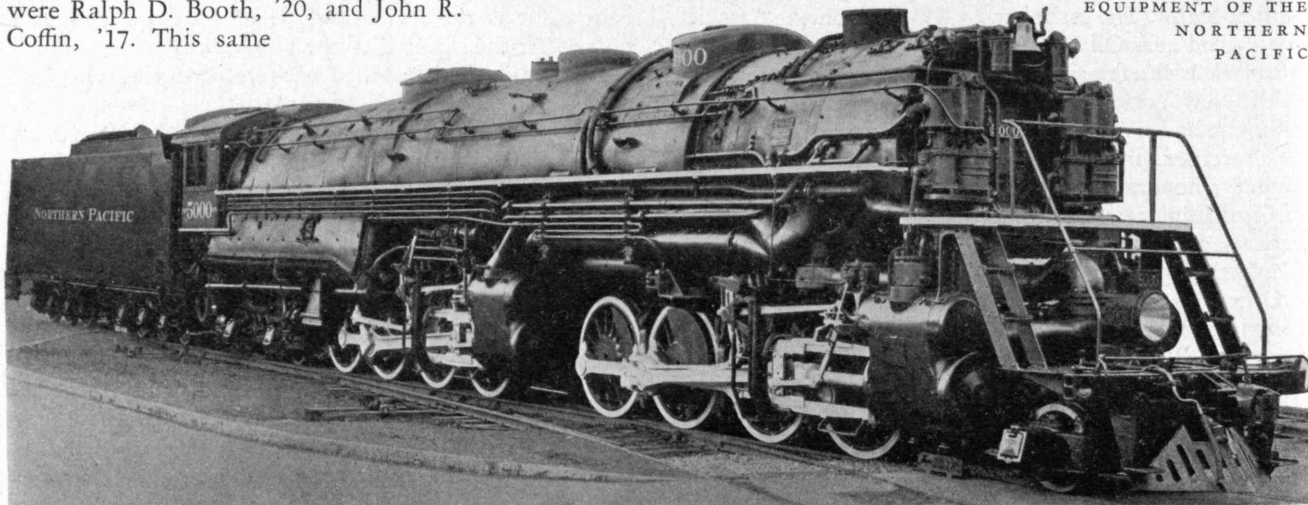
Although only three per cent of the total American trackage is electrified at this time, it is obvious, because of the many advantages and the extraordinary vigor of the roads, that this percentage will rapidly increase. Electric locomotion will be America's next major transportation achievement.

Flying in Fog

OF THE problems of aviation, none is more insistent for solution than that of landing an airplane when all landmarks are hidden by fog. On its solution depends the regularity and safety of commercial air transportation. The sponsoring by the Daniel Guggenheim Fund for the Promotion of Aeronautics of a series of experiments to devise effective means of fog aviation was commented upon in The Review of last December, and now announcement comes from that organization that Assistant Professor William G. Brown, '16, of the Institute's Department of Aeronautical Engineering will assist Lt. James H. Doolittle, S.M. '24, in the conduct of these important studies.

Efforts to make airplanes entirely independent of meteorological conditions were first brought vividly to public attention in 1923 when Lt. Albert F. Hegenberger, '17, and Bradley Jones, '10, flew a plane from Dayton to Boston with practically no aids to aviation save the then new earth inductor compass. This "flight above the clouds" was the forerunner of the Hawaiian flight of 1927 so ably directed by Lt. Hegenberger and it gave great impetus to the advancement of instrumental aviation.

ELECTRICITY HAS NOT YET DISCOURAGED THE BUILDING OF STEAM LOCOMOTIVES. A NEW ADDITION TO THE EQUIPMENT OF THE NORTHERN PACIFIC



Actual landing in fog, however, is still extremely hazardous. Lt. Doolittle and Professor Brown, in tackling the problem, will have available a full-flight laboratory over an established airway, and one of the tests they will employ will be that of having one of two pilots in a plane operate it from a covered cockpit that will force him to rely entirely upon his instruments. A hint of one of the aviation methods to be tested is to be found in the announcement that the experimentors will have the use of the radio beacon shortly to be established by the Government at Mitchell Field. It is to be recalled, too, that the General Electric Company recently announced the construction of an enormous neon light that will have great fog penetrative powers.

More on Ultraviolet

INDISCRIMINATE use of ultraviolet light produced by the many lamps now sold to the public has been tempered, it is hoped, by recent admonitions voiced by physicists and physicians who at first suspected and now have pretty tangible proof that injury may result. An active side issue has developed over certain allegations that ultraviolet-transmitting glass gradually loses its transmitting quality, becomes "solarized," after a period of time.

Donald C. Stockbarger, '19, Assistant Professor of Physics at the Institute, who, in *The Review* for November, effectively pointed out the dangers of artificially produced ultraviolet light, recently has refuted the assertion that ultraviolet transmitting glass finally becomes impervious to these short waves. In a paper prepared for delivery before a conference of the National Housing Association at Philadelphia on January 30, he said: "Whoever invented the solarization bugaboo evidently did not know that such processes slow down very rapidly so that

after a short time they come to a standstill. I have here some specimens of ultraviolet-transmitting glass which have been solarized to the limit. I know that the limit has been reached because they were tested from time to time during the solarization process and those tests proved conclusively that depreciation stopped soon after it began. It seems safe to say that any of the better materials offered by responsible makers will give excellent service as long as you care to use them. . . . Finally, I want to emphasize the importance of making use of this natural health-maintaining agent [the sun] . . . to let the sunshine into the house in all its natural ultraviolet quality is now a relatively simple matter. Windows, for example, can be made wider and higher and can be placed in unconventional locations if doing so will prove advantageous. Particularly would I suggest that sky-lights be used wherever possible, for a few of these could let in more health rays than all of the rest of the windows combined. . . .

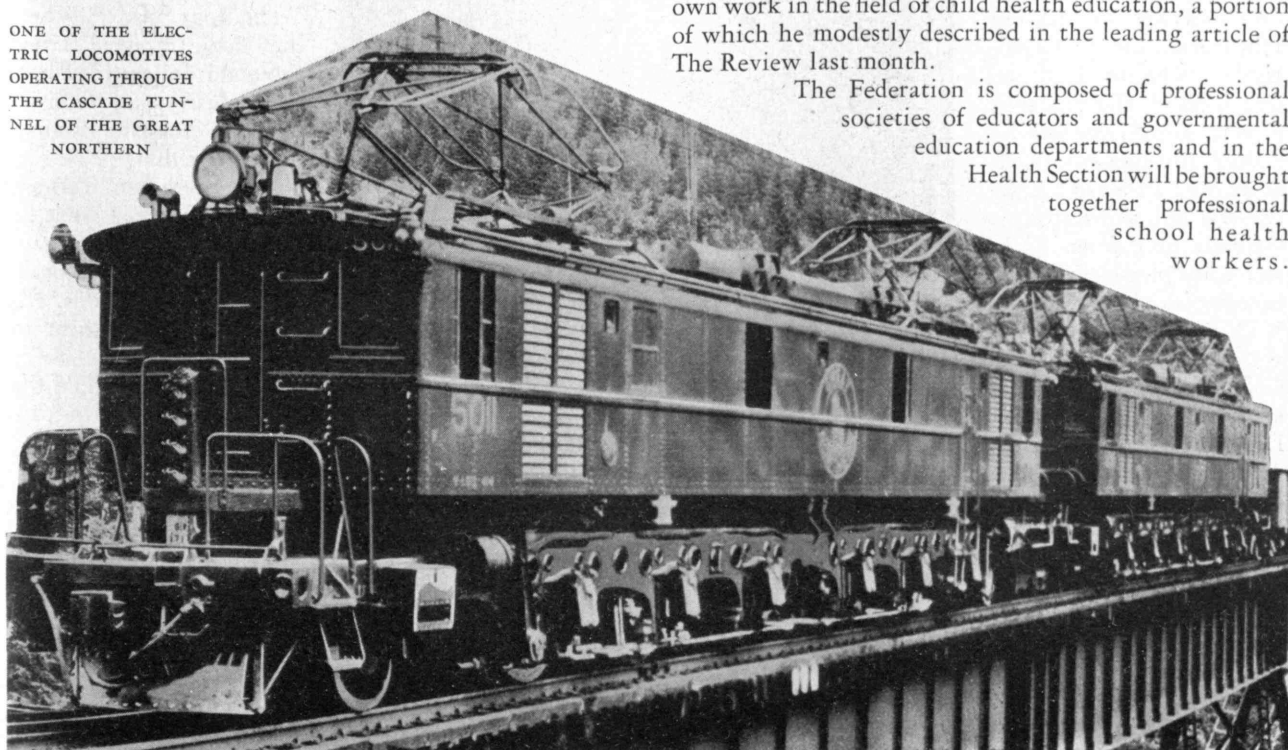
"The ideal ultraviolet home, I think, would be one in which the conventional order of the present was reversed in so far as location of rooms is concerned. I would place sleeping chambers, kitchen and dining room on the ground floor, leaving the second floor for the living room, study, playroom, or nursery. By the use of windows and skylights fitted with ultraviolet transmitting glass those rooms in which we spend most of our time would thus have the greatest benefit from the sunlight."

International Health

WHEN the World Federation of Education Associations convenes in Geneva next July, Professor Clair E. Turner, '17, of the Institute's Department of Biology and Public Health, will be chairman of the Health Section which will deal with world problems of school health. Dr. Turner's qualification for this post is attested by his own work in the field of child health education, a portion of which he modestly described in the leading article of *The Review* last month.

The Federation is composed of professional societies of educators and governmental education departments and in the Health Section will be brought together professional school health workers.

ONE OF THE ELECTRIC LOCOMOTIVES OPERATING THROUGH THE CASCADE TUNNEL OF THE GREAT NORTHERN





Alumni Dinner

HALF a thousand or so Alumni once a year convene, dine together, swap stories, gossip, listen to speeches, go home pleased or disappointed — to reappear undaunted at a similar occasion twelve months later. This they have been doing, for reasons doubtless good, though varied, since the late Seventies, in spite of two wars, the turning of a century, prohibition, and other vicissitudes.

The 1929 Dinner of the Alumni Association, therefore, came to pass on February 16 at the Hotel Statler, which latter fact, plus the able administrative arrangements of the Committee on Assemblies, headed by Edward L. Moreland, '07, made it an extremely well-ordered affair. For the second successive year it neither rained nor snowed on the appointed evening and the scheduled events went off expeditiously under the direction of the toastmaster, Alexander Macomber, '07, President of the Association. Besides, in pleasing substitution for the Chamber of Commerce organ which irked *The Review's* former correspondent by going oompah-oompah, there was an adequate orchestra and the movie, a German film from UFA, seemed to please everybody except snake lovers.

The principal speaker was Dr. Charles P. Berkey, Professor of Geology at Columbia and a member of the Coolidge Commission to study the Boulder Dam project, about which he talked. Dr. Berkey's claim to fame rests not only upon his studies of the Colorado Basin but upon his work as Chief Geologist of the Roy Chapman Andrews Central Asiatic Expeditions into the Gobi Desert. A résumé of this dam-can-al-flood control-power development which the Commission found feasible appears on page 275. In the brief period allotted to him, Dr. Berkey unraveled and made lucid the story of the Colorado River and its import to the Southwest.

Prior to Dr. Berkey came President Stratton who read a carefully prepared and well received address bursting with facts about the Institute. High lights of his remarks

were: "The most urgent general needs of the Institute are: (1) Completion of the dormitory group and the provision of one for graduate students. (2) A gymnasium. . . . (3) An auditorium. . . . The more specific needs are: (1) An endowment fund for graduate instruction. . . . (2) A laboratory for graduate instruction and research in chemistry and physics. . . . (3) A towing tank in connection with the work in Naval Architecture and Aeronautics. . . . (4) A laboratory . . . for graduate instruction and research in hydraulics, especially in the fields which have to do with power development and the control of water ways. . . . Funds for the construction of such a laboratory . . . have been assured within the past few days."

He also referred to the proposal that the tuition charge, which now covers half the instructional cost, be raised to equal the cost on the theory that those who benefited from education should pay its cost. But, he asked pertinently, who receives the benefits from the education of the Technology men? "Where they have received a few thousand dollars in salary, the industry has received millions. Industry should recognize this."

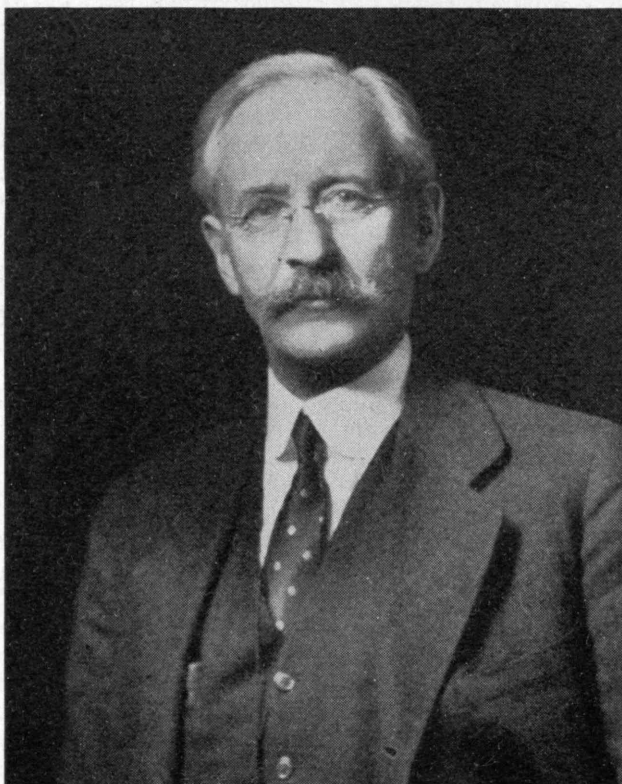
"Not long ago, Thomas Edison was asked what he would do if he were again confronted with the problem of educating sons. His reply was 'Send them to

the Massachusetts Institute of Technology.'

"Can there be any doubt as to who should share the cost of scientific and technical education with the particular men who receive it?"

There were two other speakers: William Haines, Coach of Crew, who charmed his audience by predicting a successful crew season, and Maurice L. Scharff, '09, who begged all to come to Pittsburgh on May 3. At that time the T. C. A. will convene as described on page 284.

The "Stein Song" concluded the evening. The audience sang the first verse as if it were a funeral dirge in accord with immutable custom, and hummed the second verse (the words for which they, as usual, chose to disregard) in the same stolid tempo. Perhaps this year, though, they were really sad because the dinner was over.



CHARLES P. BERKEY, PROFESSOR OF GEOLOGY AT COLUMBIA UNIVERSITY, WHO WAS THE PRINCIPAL SPEAKER AT THE ANNUAL DINNER OF THE ALUMNI ASSOCIATION

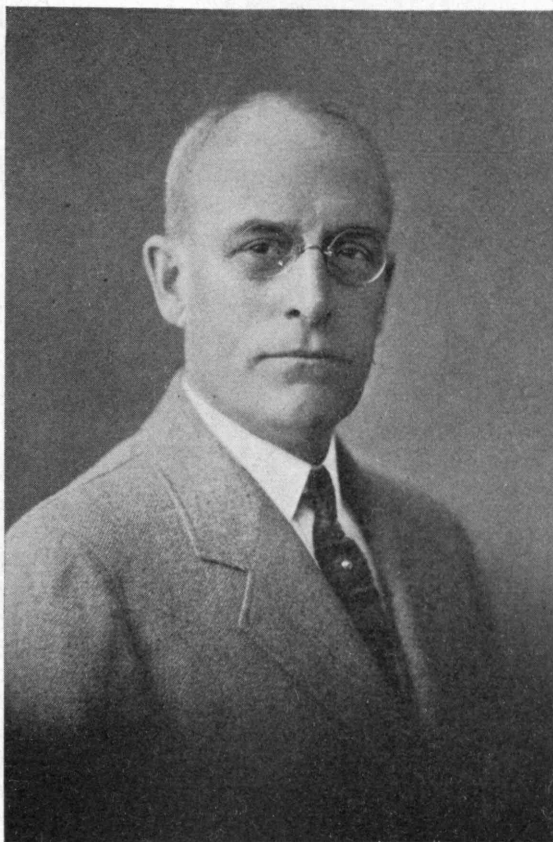
Shake Recorder

BY MIDSUMMER, if plans mature, there will be a seismograph of ultramodern design installed at the Civil Engineering Surveying Camp located near the village of East Machias, Maine, and not far from the most easterly point of the United States. It will be the only seismograph station in the extreme northeastern section of the country and its observations are therefore expected to be especially valuable in complementing the data gathered by other observation points.

In scientific work of this character, studies must necessarily be conducted over long periods of time for the detection of earthquake shocks is not the sole, or even the chief, purpose of this new station, but studies of the variation of sea level, tilt of the land surface, and changes in astronomical and geodetic position are to comprise its manifold activities. Furthermore, this new station is to function as a training ground for instructing advanced students in seismic research.

The cooperation of the United States Coast and Geodetic Survey is assured and the station will permit extension of the previous geodetic work at Camp Technology under the direction of Professor George L. Hosmer, '97. During the past two years a baseline has been established and an observation tower set up, making it possible to carry out triangulation measurements between this and two other stations. The baseline was established by Professor Hosmer and a field party of students, and measurements show an accuracy of nearly one in two million. During 1928 the line of precise levels was continued, the distance now being approximately thirteen miles. It is Professor Hosmer's intention to check this line from time to time to study any possible changes in elevation.

The seismograph chosen for the Institute's studies is one developed by Dr. Frank Wenner of the United States Bureau of Standards. The instrument registers by means of a galvanometer, and consists of two units, one recording east and west, and the other north and south movements of the earth. This type of instrument permits remote recording, and in the installation at Camp Technology, the record will be made in the quarters of an observer at some distance from the seismograph units. The instant the galvanometer begins to swing in response to an earth tremor, the message is automatically flashed by wire to a specially equipped dark-room where a tiny



ASSOCIATE PROFESSOR JAMES L. TRYON, SOMETIME LECTURER ON INTERNATIONAL LAW, NOW DIRECTOR OF ADMISSIONS, A NEWLY CREATED ADMINISTRATIVE OFFICE, REPLACING THE CHAIRMAN OF THE COMMITTEE ON ADMISSION. DR. TRYON HAS BEEN VISITING COLLEGES AND SCHOOLS THROUGHOUT THE COUNTRY IN THE INTEREST OF THE INSTITUTE

pencil of light begins tracing the story of the earth waves on sensitized photographic paper.

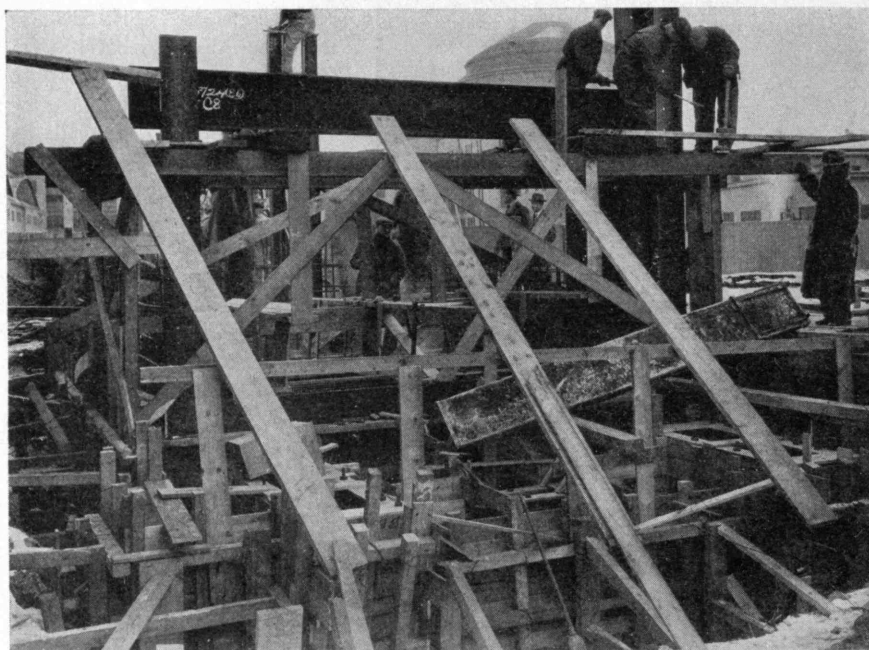
The record sheet will be developed daily and sent to the office of the United States Coast and Geodetic Survey in Washington for comparison with observations from other stations. Very complete information for locating the center of an earth disturbance is found in the study of records from widely scattered stations.

Flu?

NO MORE timely gift ever came to the Institute than the Homberg Memorial Infirmary, dedicated on November 13, 1928, but placed in service last summer. For the added facilities it placed at the disposal of an already efficiently operated Department of Hygiene made it possible to cope with the sundry species of "flu" imported into Cambridge by students returning from the holiday vacation period.

Designed to accommodate fourteen patients, hastily improvised overflow wards doubled its capacity and a further reserve of beds (on hand but fortunately not needed) would have quadrupled it. In all, the admissions to the Homberg between July 1 and the end of the midyear examination period (when the student body left again for their homes possibly to collect further species) was 174. Grippe colds was the diagnosis in 140 of these cases. The troubles of the other thirty-four ranged alphabetically from abscessed ears and appendicitis through jaundice and pneumonia to tonsillitis and trench mouth.

The absence of the word influenza on the Infirmary list caused several protests for many of the 140 "grippe cold" patients maintained steadfastly that "flu" was what they had. Influenza, they reasoned, was a most fashionable malaise and should not be denied its proper appellation on account of its sordid origin. For, they cited, this specific catarrhal disease, recognized since 1323, had received its name of influenza when it crossed the Alps and invaded Italy in the days of Galileo. This name came from the Italian word *influenza* which is related to the Latin *influentia*, which means "flowing in." The bacillus flows in, does its work, and, producing catarrh, the process is reversed. Catarrh is derived from the Latin word *catarrhus*, derived from the Greek *kata*, down, and *rheo*, flow, and Greek *katarrhoos* means a "flowing down or out." Later the French gave it the name of



NEW SOIL TESTING BIN RECENTLY SET UP AT THE INSTITUTE AND DESCRIBED IN THE ADJACENT COLUMNS. WITH IT FULL SCALE TESTS ARE BEING MADE TO COLLECT ACCURATE DATA ABOUT EARTH PRESSURE AGAINST RETAINING WALLS

"la grippe" which the Medical Director prefers, though he did concede that influenza or catarrh had some merit as descriptive terms for the watering of the eyes and running of the nose that endeared his grippe cold patients to their friends.

The Medical Director's worries and responsibilities, however, were not those of terminology for, besides the Infirmary cases, the clinic or out-patient department of the Homberg, in the seven months (July 1 to January 29), had handled 10,244 cases, subdivided as follows: students, 8,858; instructing staff, 287; employees, 1,099. During the January pre-midyear rush had come 3,531 of these, the subdivisions being 3,170, 113, and 248, respectively. By the law of averages it would appear that the Faculty were the healthiest group, the students next, and the employees last.

Earth Pressure Studies

AN AGE-OLD problem in civil engineering and one which has always been a subject of controversy, the intensity of earth pressure against retaining walls, is now being studied at Technology. With the aid of the most elaborate apparatus ever constructed for research in this field, Charles Terzaghi, Associate Professor of Foundation Engineering in the Department of Civil and Sanitary Engineering, is engaged in an attempt to uncover the facts.

For 150 years there has been a continuous series of papers and books on the subject of intensity of earth pressure and within the past quarter century large scale tests have been made in Berlin, Hanover, Zurich, and the University of Cincinnati, in an attempt to reduce the problem to usable formulae. These past tests, however, are incomplete for they have been made only with dry or slightly moist soils.

Dr. Terzaghi's research was brought about by the proposed construction of a large earth dam by the New England Power Company. This project involved a determination of the effect of saturation on lateral earth pressure, and, since all available information was controversial, it was thought wise to obtain new data from large scale experiments.

The apparatus he is using at the left consists of a spacious bin with heavily reinforced concrete walls, ten feet high and two feet thick. It is open on one side, has a bottom two feet thick and rests on a reinforced concrete mat three feet in depth. The mat rests on seventy-five foundation piles, a precaution against settlement during tests. Special thought was given to designing the foundation in such a manner that emptying and filling the bin would cause no tilting of the structure.

The open end of the bin is closed by a retaining wall consisting of heavy structural steel and concrete, seven feet high, and fifteen tons in weight, which is suspended on specially designed scales of unusually heavy construction to measure the intensity of the friction between the wall and the soil with which the bin is filled. The side-pressure exerted by the earth is also measured by scales located at various points. The joint between the end of the bin and the experimental retaining wall will be sealed with rubber strips which would allow the retaining wall to move one inch without leakage of water.

All the measuring devices rest on heavy structural steel platforms directly connected with the test bin. The wet soil in the bin weighs eighty tons, giving the apparatus a total weight of 480 tons. Two types of soil that will be used to back-fill the proposed dam have been brought by rail several hundred miles from the site in northern New England. A third soil of different type will be used as a control material.

Research in the behavior of soils, particularly in connection with the construction of highways, was started at the Institute two years ago under the direction of Dr. Terzaghi. These studies were carried on in cooperation with the Bureau of Public Roads of the United States Department of Agriculture.

William L. Underwood, '98, (1864-1929)

LONG a confrère of Professor Samuel C. Prescott, '94, Head of the Department of Biology and Public Health, and from 1898 to 1928 an associate of his as Special Lecturer in the same department, William L. Underwood, '98, died of pneumonia on January 28.

Mr. Underwood was a bacteriologist and a naturalist. His bacteriological work applied to the canning and preserving industries, to mosquitoes and their extermina-

tion, and the gypsy and browntail moth problems. With Professor Prescott he was the joint author of "Science and Experiment in the Canning Industry."

Writing as a naturalist, Mr. Underwood incorporated many of his findings in the fields of his researches. Two of his subjects, "Wild Brother" and "Wilderness Adventures," relate his experiences with a camera in Maine, Canada, Florida, and other places. Of late, he had experimented with the cinema and its application to the study of natural history. His will, just probated, provided \$20,000 for the Department of Biology and Public Health.

Another Bequest

UNDER the will of James H. Haste, '96, who died January 7, the Institute is to receive \$100,000 "to hold, invest, and reinvest . . . and to collect the income thereof and use the same . . . for the aid of deserving students thereof of insufficient means, said fund, together with any other sums which said institution may receive under this will, to be known as the James H. Haste Fund." Mr. Haste also directed that the residue of the estate be divided equally between Technology and Phillips Andover Academy.

Born in Bradford, York, England, in 1867, Mr. Haste was brought to New England when four years old. Shortly after his graduation from the Institute's Course in Chemistry, he entered the employ of the Eastman Kodak Company and at the time of his death he was manager of the Kodak Park works in Rochester and a Director of the Company. An expression of the esteem in which he was held by the Technology Club of Rochester, together with a personal appreciation by George Eastman (with whom he had been closely associated since July, 1897) appear in the Class of 1896 notes on page 290.

Staff Changes

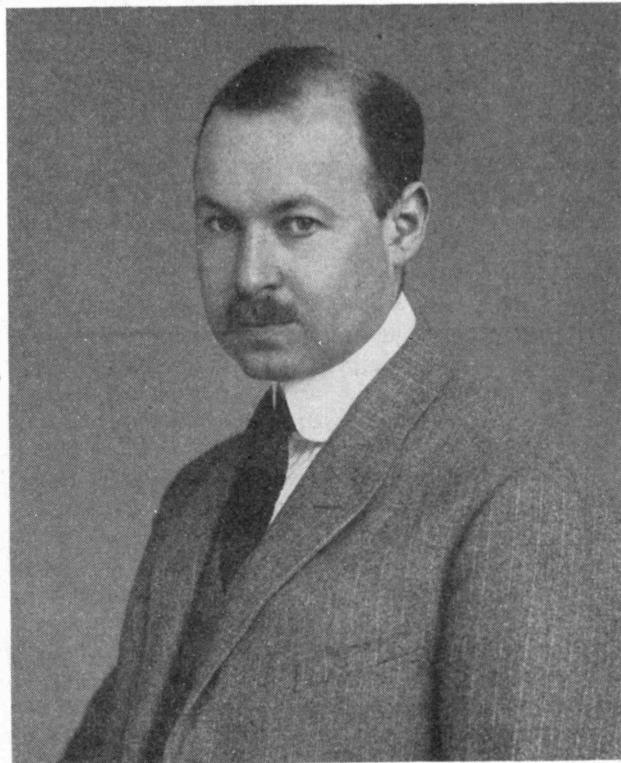
IN FEBRUARY the Institute's instructing staff lost an Associate Professor by resignation (the transfer of Assistant Professor William G. Brown '16; as recorded on page 278, being only temporary) and acquired a new Lecturer by appointment. The former, a graduate of Clark University, John T. Ward, who was in charge of the Course in Gas and Fuel Engineering, came to Technology in 1923 from the National Carbon Company. He resigned to accept the post of Assistant General Manager of the M. W. Kellogg Company of Jersey City, manufacturers of oil refining equipment.

The new Lecturer is Walter L. Whitehead, '13, whose appointment is in the Department of Geology and his subject will be the geology of coal and petroleum. He served as an officer of field artillery in the American Expeditionary Forces during the World War and subsequently, in 1917, received the degree of Doctor of Philosophy from the Institute. As a consulting geologist and mining engineer, Dr. Whitehead's experience has embraced South America, Australia, Canada, and South Africa as well as the United States. He is now reputed to be the greatest living authority on the geology of New Caledonia. With William F. Jones, '09, he was the author of "Touring Venezuela in a Model T" in The Review for February, 1928.

137th Meeting

ODDS-GIVERS, who wagered the Alumni Council would begin the new year with a bang, on January 29 had their dreams come true. As usual, the 137th Meeting was in Walker Memorial and, as usual, it was preceded by a dinner. Otherwise it was an unusual meeting. First the councillors heard with approbation of the place "General Studies" occupied in the Technology curriculum from Professor William Emerson, Head of the Department of Architecture and Honorary Member of the Alumni Association; next, they voted with gusto the report of H. B. Richmond, '14, recommending a boost of the Life Membership fee from \$50 to \$75; finally they got down to the real serious business which was a debate on amending the By-Laws. Right away it was patent that not all the councillors were yes-men; hence the evening had its bang.

Caldest among those who dilated for or against the proposed amendments was the chairman, President Alexander Macomber, '07, who, by coincidence, had also presided (as Vice-President while President George L. Gilmore, '90, was a golfing in the Carolinas) over the 105th Meeting of the Council on March 31, 1924, at which time the By-Laws were last amended. Also, by coincidence, the changes proposed at the earlier meeting likewise related to the method of selecting Term Members on the Corporation which body is, by charter, the legal Massachusetts Institute of Technology. However, the amendments offered to the earlier meeting were, after prolonged debating by pros and cons,



REINHOLD RUDENBERG, HONORARY PROFESSOR OF ELECTRICAL ENGINEERING AT THE TECHNISCHE HOCHSCHULE IN GERMANY. HE HAS JUST COMPLETED A SERIES OF LECTURES IN THE DEPARTMENT OF ELECTRICAL ENGINEERING

adopted while those offered on January 29, 1929, were handed back to their sponsors for "further consideration."

In the minds of some members of the Council there had been germinating, perhaps ever since March 31, 1924, a dissatisfaction with the statutory method of choosing the Term Members. Popular election by an apathetic electorate, they cite, often defeats candidates of merit whose business careers have not placed them outstandingly in the public eye. Thus the Corporation is bereft of many potentially worthy members. Last spring this dissatisfaction became vocal on the floor of the Council and a committee was constituted to probe the situation and to report to the November meeting.

The gist of its findings resulted in a recommendation to do away with sending an individual ballot to every member of the Alumni Association belonging to a class graduated five years or more, substituting for it an Electoral College composed of class representatives on the Council and the members-at-large, Councillors representing local alumni clubs were to be allowed to attend the Electoral College and to discuss, criticize, suggest, protest, or do almost anything within reason except to vote. For, in the committee's opinion, class representatives as Electors would insure the most equitable expression of alumni sentiment, especially if ballots by the ten members-at-large be added to leaven the lump. The November meeting endorsed this proposition in principle and appointed another committee to draft the necessary By-Law amendments for submission to the January meeting.

During the intervening two months opposition has been developing. So, on January 30, the amendments faced a filibuster led, as salutarian, by Raymond S. Stevens, '17, resident of Melrose, Mass., but representing on the Council the Technology Club of Philadelphia. He oppugned the measures on the academic grounds that they deprived the electorate of the franchise. Even though the Council might legally do this, pleaded Mr. Stevens, the import of the change was of such magnitude that a vote of the entire Association ought to be taken. Roy W. Chandler, '12, voicing the sentiment of the Pittsburgh Alumni, desired that final action be suspended until the local clubs might register their views. Leslie W. Millar, '02, President of the Technology Club of Chicago, was not present but had mailed his thought that the Electoral College should be composed of club rather than class representatives.

Richard H. Ranger, '11, President of The Technology Club of New York, feared the proposal, if effected, might cause out-of-Boston Alumni to lose interest in the affairs of the Association. He recognized that at present but one-fifth of the electorate participated in the voting. Still, this fifth might feel badly if it lost the privilege. Anyhow, one-fifth he deemed a much better showing than most organizations could muster.

Proponents of the amendments were by no means silent. Among those contributing favorable comments were: Allan W. Rowe, '01, representing the Technology Club of Minnesota; Frederick Bernard, '17, representing the Southeastern M. I. T. Association; C. Frank Allen, '72, representing his class; and President Macomber. As the evening wore on it became increasingly apparent that

the Council was in no mood to jam the amendments through but preferred to dry dock them for overhauling. This it finally did, on the motion of Professor Allen, without a dissenting vote.

President Macomber, before adjournment, revealed that the collection of Alumni Association dues, handled this year for the first time by The Review, has reached a record total of 6,993. This figure, he believed, represented a larger percentage than that of any other Alumni Association. By press time (February 20) this total of dues payers had been increased to 7,156. Also, by press time, odds were nearly even (with few offerings) on one place to which the 138th Meeting would probably refer the amendments.

The usual February Council Meeting, which would have been held on the last Monday evening of the month, the twenty-fifth, was omitted this year because of the Annual Dinner falling so close to that date. The 138th Meeting, therefore, will be held in the Faculty Dining Room of Walker Memorial at 7:45 P.M., March 25. As in the past it will be preceded by a dinner at 6:30 P.M.

Ballooning and Banqueting

TO GIVE those attending the Technology Clubs Associated convention at Pittsburgh an opportunity to witness the National Elimination Balloon Races and the Pittsburgh Aeronautic Exhibition, the date of the convention has been changed from May 10 and 11, as announced in the February issue of The Technology Review, to May 3 and 4.

A tentative program has been announced by officials of the T. C. A. The morning of May 3 will be devoted to registering the guests and to reunions. For the afternoon, a special exhibition of airplanes of all descriptions and flying stunts has been arranged at one of the flying fields. For the same afternoon special arrangements have been made to greet Technology men arriving by air. The committee expects to induce a number of Alumni to travel to Pittsburgh in this manner, and arrangements are being made in the large cities of the East where airports are in operation to have some type of aircraft make a scheduled trip to Pittsburgh at that time. Specific information about this will be mailed in March.

At the banquet, which is scheduled for Friday evening, there will be brief addresses on Institute affairs and aeronautical topics. The business of the meeting will be conducted on the morning of Saturday, May 4, and will be followed by more addresses either on Institute affairs or aeronautics.

An indication of the extent of the program may be gained from a glance at the list of notables who have signified their intention to be present: Dr. Samuel W. Stratton, President of the Institute; Hon. Edward] P. Warner, '17, Assistant Secretary of the Navy for Aeronautics; Hon. F. Trubee Davison, Assistant Secretary of War for Aeronautics; Paul W. Litchfield, '96, President of the Goodyear Tire and Rubber Company; Rear-Admiral W. A. Moffett, in charge of Bureau of Aeronautics of the Navy Department; and Major Lester D. Gardner, '98, Past President of the Aeronautical Chamber of Commerce and President of Aeronautics Industries, Inc.



NEWS FROM THE CLASSES



The Grab Bag

NOW that California and Florida are holding their annual climate boosting season, news is gathering in such quantities in The Review Office that a total of nearly thirty-three thousand words of Class Notes has been prepared for this issue.

The '82 Class Notes had gone to press before the death of James P. Munroe at his home on February 2. The comments by him, however, of his civic work in Boston are very fitting and supplement the tribute to him by Harry W. Tyler '84 on page 271. The death of Mr. Munroe is a very great loss, both to the members of his Class, and to the Institute.—The completion of the great Conowingo Dam has called forth some interesting comments on its builders, Stone and Webster. In this well written account of the infancy of one of our greatest engineering firms, there is an amusing incident which happened when these partners were called in to find the cause of failure of a small southern street railway. All cars were continuously being blocked on its single track by the private car which the wife of the President of the company used for shopping. — Charles Hayden, who has recently been entertained along with Sir Esme and Lady Howard by Mrs. Whitelaw Reid, is a banker well able to give sound information on the state of the stock market. This he does at some length in the '90 Notes. Will anyone vouch for the truth of the rumor that it was this same Charles Hayden who was so young when he attended Technology that his family refused to let him wear that symbol of manhood, long trousers?

The Vermont flood of 1927 has still very real significance to engineers. State authorities are at work to lessen the effect of future floods by the construction of detention or storage reservoirs. A '95 man has been studying this subject exhaustively. — There is a reference in the '96 Notes that may be obscure to the later classes. The Chapel where his

classmate was a wizard at billiards refers to the bar and pool room of the Brunswick Hotel. Professor Locke also mentions the part played by a '96 man in the recent Boston scandal over allegedly inaccurate analyses of liquor.

It is to be noted that the Secretary of '99 has attempted to satisfy insatiate demands for more news of Arthur Hamilton, he of the lion hunting companion. It has turned out that his retiring traveling companion is the author of a comedy now playing on the road which is guaranteed to please persons of discrimination. A new definition of this word discrimination comes from Arthur Hamilton — "that quality one possesses and compares other tastes with." It may not be Websterian, or Oxfordian, but this definition has its merit. — Professor Russell, Secretary of '00, has found a new outlet for his energy. He instituted a fathers and sons night for his classmates and obtained a goodly representation. This was his last official act for his resignation brings into office a successor who is welcome to these pages no less than his predecessor.

This issue includes a fine specimen of the authenticated work of our "model" Secretary of '01, Dr. Rowe. In a thoroughly bachelor fashion he pokes fun at his classmates with large families, inferring that they are cattle raisers. But read the whole column! — Although we do not list the advent of grandchildren in The Grab Bag, special attention is called to a young grandmother in the Class of '05 Notes. Also included is a lament from Secretary Davis that his position demands that he fulfill the function of a Tel-U-Where bureau.

"Desmond for Mayor of New York," is the cry in the '09 Notes. Thomas C. Desmond, who has been President of the New York Young Republican Club, is under consideration as a successor to Mayor Walker. — The Secretary for '12 offers comments on milk dealers and their practices in a voice tinged with cynicism.

— We note with interest the growing enthusiasm in the coming reunion of the Class of '14.

The Class of '16 is now in full swing. After a loyal attempt of the Assistant Secretary last month, steps were taken to appoint a new Secretary with the resulting huge crop of notes. So many notes, in fact, arrived from this new source that arrangements had to be made to publish half of them in the April issue. From these notes you will discover why Rusty White has had no time for his secretarial duties, and this explanation seems justifiable in view of the magnitude of his present job. The '15, '17, and '18 Secretaries may now cease to save space for '16, for here are notes galore, with the promise of more to come.

Something new in the promotion of public health is being directed by Professor Turner, as related in the '17 Notes. The movie and the microscope have been united in order to aid instruction in the public schools. — Pointers on a course in hobo-ology are offered in the '19 Notes in an amusing way. — A member of the Class of '20 has been commended by the Near East Relief Committee for his work in Syria. An account of his worthwhile work is included in the notes for that Class. — Pretzel-bending as an art and a profession is the subject of the Course V Notes for the Class of '25. Prohibition has undermined the industry, and pretzel-benders have been forced to turn to the making of frogs for pajamas in order to alleviate their financial difficulties. This amusing detour into fiction is backed up by a true story of a strenuous chase to get a parcel of gloves to the *Graf Zeppelin* before it sailed to America.

This month shows a remarkably fine record. Only three Secretaries have failed to get their notes in. News concerning the Class of '06 should be sent to James W. Kidder, whose address is 8 Harrison Avenue, Boston, Mass. His notes are missing for the first time this year. — The Secretary of '10, Dudley Clapp, of 16 Martin Street, Cambridge, Mass.,

had a single note in the January issue. We hope to see more material in his space in the April issue. — Eric F. Hodgins, the Secretary of '22, has presented no notes in this section since last July. It is rumored that he is about to publish his resignation. News should be sent to him at 8 Arlington Street, Boston, Mass.

The birth rate for this month falls exceedingly low. Only four births are recorded, of which two are girls and two are boys. The Classes of '20, '24, '25, and '26 report one birth each. Children who have reached the age of six months or more and who have not appeared in this column will not be included in this list.

Deaths

Further mention of the following, recently deceased, may be found in the notes of their respective classes:

FREDERICK K. COPELAND '76. Died on November 10, 1928, following an operation. Was President of the Sullivan Machinery Company from 1892 until his death.

RUFUS F. HERRICK '82. Died on January 24, 1929. Was a sales engineer and Assistant Secretary for his Class.

JAMES P. MUNROE '82. Died on February 2, 1929, after an illness. Was a life member of the Corporation and interested in many civic affairs.

HENRY R. BATCHELLER '94. Died on January 16, 1929, after a slight illness. Was engaged in practical mining and consulting work.

HARRY W. COTTON '95. No date given for his death. Was the Treasurer of the American Tube Works.

ELVIRA WOOD '96. Died on December 30, 1928. Was assistant to the curator of the American Museum of Natural History up to the time she became invalided.

JACOB STRADER, JR. '96. Died on December 22, 1928. Was associated with the Union Carbide Company of Niagara Falls.

JAMES H. HASTE '96. Died on January 7, 1929. Was for thirty-two years associated with the Eastman Kodak Company.

ARTHUR F. HOWARD '98. Died suddenly on December 5, 1928. Was in the insurance business and a leading citizen of Portsmouth, N. H.

ROBERT P. ROBERTS '00. Died on September 11, 1928. Was chief metallurgist for the Mount Lyell Mining and Railway Company of Queens-town, Tasmania.

ROBERT A. ANGUS '08. Died on September 3, 1928, at Mount Vernon, N. Y.

HOWARD C. THOMAS '15. Died on December 10, 1928. Was a construction engineer for Lockwood, Greene and Company until his health failed.

'74 Russ has made a trip to Honolulu, from which he mailed a postal card on December 10. Soon after leaving home he wrote that he might go to Australia before returning.

There was an enjoyable quarterly class lunch at the City Club on December 19, which was attended by Messrs. Barrus, Chase, Nickerson and Read. — CHARLES F. READ, *Secretary*, Old State House, Boston, Mass.

'76 More than two-thirds of those who graduated with us have gone on to their reward. The latest to go is Fred Copeland, who was without a superior among all the men whom I have known, in strength of character, in courage, in living close to his ideals, and in all that makes us love and honor a friend. He died at Claremont, N. H., on November 10, following an operation for appendicitis.

After graduation from Technology in 1876, Fred spent several years in Iowa and Colorado in mining engineering work, following which he helped organize the Diamond Prospecting Company in 1884 and became its President. This company engaged in contracting with the Diamond Core Drills made at Claremont, N. H., by the Sullivan Machine Company. In 1892 the two companies were merged as the Sullivan Machinery Company with Fred as President, and he continued this position until the time of his death. Under his leadership Sullivan products were developed for a wide range of purposes, serving the mining, quarrying, construction, and manufacturing industries. Manufacturing

was done at plants at Claremont, N. H., and Michigan City, Ind., and a worldwide sales organization was built up.

Fred maintained active leadership up to the date of his final illness. He was a member of numerous engineering societies, including the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers, the New York Engineers Club, and the Bankers Club of New York, and was a Past President of the Engineers Club of Chicago, of the Western Society of Engineers, and of the National Metal Trades Association. He had served as a member of the Corporation of the Massachusetts Institute of Technology from 1906 to 1910, and in earlier years as a trustee on the village board of Winnetka, Ill., where he made his home for nearly forty years. He leaves two brothers, Robert James Copeland of Canyon City, Colo., and William R. Copeland of Hartford, Conn.; and a sister, Mrs. Russell Allen of San Diego, Calif. He leaves a wife, Anna L., who is the sister of the wife of our classmate, Theodore Schwarz; a son, Frederick W. Copeland, Vice-President of the company in charge of foreign affairs; and a daughter, Mrs. N. H. Blatchford, of Winnetka, Ill.

Fred combined a great capacity for leadership with an unusual power for grasping and analyzing facts with keen foresight and sound judgment. His counsel in the industries of which he was a part was often sought and highly valued. He gave unstintingly of his energies to activities and causes that appealed to him. In the recent presidential campaign Fred was Chairman of the Illinois Engi-

neers Committee for Herbert Hoover. He was a warm friend of Mr. Hoover's, a friendship which began in 1920 when Herbert Hoover was the guest of honor at a banquet in the Sherman House, Chicago, at which Fred presided. Mr. Hoover was delayed by a railroad wreck and did not arrive until midnight. Telegrams of his progress were received from time to time, and Fred held the audience with stories, music, and so on, and finally read Mr. Hoover's speech of which a draft for the press had been sent in advance. When Mr. Hoover arrived and hastened to deliver his speech in person Fred had not the heart to tell him it had already been delivered.

In business he was a strong individualist, believing that helping other men to help themselves, in an atmosphere of fair play, is the best social and industrial policy. He fostered forward-looking policies in factory conduct and operation, and inspired his associates, both old and young, with loyalty and with belief in his ideals.

A great fondness for outdoor things was a dominant note in his entire life. His avocation and his relaxation were gardening, an inheritance from his father, Robert Morris Copeland, a distinguished landscape architect. At this home in Winnetka he could be found in much of his leisure time, working with plants, shrubs, and flowers. Each year, with a small party of friends, he spent a month on horseback in the Wyoming mountains, enjoying nature intimately in its most beautiful and unspoiled aspects. — JOHN R. FREEMAN, *Secretary*, 815 Grosvenor Building, Providence, R. I.

'82 The general news regarding Munroe which has so frequently appeared elsewhere in *The Review* has somewhat handicapped the Secretary in utilizing the same for exclusive presentation in the Class Notes. So when the newspapers reported recently that he had been reelected President of the Twentieth Century Club of Boston, he was immediately importuned to furnish something further of interest to his classmates of '82. With his characteristic promptness the following letter was forthcoming, which brought to the Secretary his first knowledge that Munroe's physical condition had not been of the best since he passed up attendance at the Reunion last June. Most of us are beginning to realize what it means to be called upon to obey the doctor's orders. Doubtless, few, if any of us have been carrying such a burden of responsibility as Munroe in connection with many helpful activities. The Twentieth Century Club has been notable for its Saturday luncheons with addresses on current subjects of diversified interest by speakers with a message. Munroe's letter under date of January 21, 1929, is as follows:

"I have been a sort of invalid now since last May 1, with a succession of attacks of the grippe, and more recently with neuritis which laid me up in the house all last week. I am feeling better today and am at the office for a few hours. The recent attack warns me that I must obey the doctors and pull out of just as many of my outside obligations as I possibly can. I shall hold on to the Twentieth Century Club for the year, since I have promised to remain there, and since Mr. Whitney, the Secretary, relieves me of practically all the responsibility except presiding. I have given up the presidency of the Benevolent Fraternity of Unitarian Churches; directorship on the Board of Governors of the Engineers Club; membership on the Council of the Massachusetts Association for Promoting the Interests of the Adult Blind; membership on the Massachusetts Civic League; and directorship in the Unitarian Laymen's League. The most important of these has been the Benevolent Fraternity of Unitarian Churches which, during my presidency, has taken over the funds of the Parker Memorial and the Barnard Memorial and has re-established, at Bulfinch Place Church, the old free platform of the Parker Memorial.

"To return to the Twentieth Century Club, I began my presidency in January, 1924, and have presided at most of the Saturday luncheons since that time. I am sending herewith lists of speakers for the last few years, and I think that, as an old member of the Club, you will agree that they have been of a remarkably high quality. In spite of the fact that a few years ago we nearly doubled the capacity of the hall, the luncheons are crowded, and almost every Saturday a number have to be turned away. Furthermore, the club house has become a real civic center, luncheons and dinners being held there practically every day throughout the season. We have had a difficult piece of financing to pay for 4 Joy Street, which

we bought several years ago, but we seem to be emerging from our difficulties, and, of course, the Joy Street property is continuously growing in value. One reason for my immediate withdrawing from outside activities, besides the reason of health, is the sudden death last week of our general manager, which throws much added responsibility on my shoulders." Munroe admits further, but not for public announcement, that he is becoming interested in some other propositions that to the Secretary at least do not suggest such escape from his responsibilities as might have been anticipated "under the doctor's orders." However, we may look for further information at a later date.

The Secretary has recently sold to his associates his interest in the advertising business of Walter B. Snow and Staff, Inc. It will be continued under the same name with office as at present in the Statler Building, Boston, with Harold Bugbee (who is Secretary of the Class of '20) as President, and Miss Adelaide S. McKenna as Clerk and Treasurer.

Owing to editorial misunderstanding, the Class Notes regarding the Secretary's address were somewhat confused in recent issues of *The Review*. His Boston and Watertown addresses will be discontinued and his permanent address will be Falmouth, Mass., where he is now most congenially settled as a citizen.

Sad indeed is the news that must next be told. The preceding items had only just been written, on January 24, when the Secretary put in a phone call to Rufus Herrick to tell him the latest Class News. Imagine the shock when from his office came the word that only a few minutes before had they learned of his sudden death from cerebral hemorrhage as he was coming on the train from his home in Winchester. He will be sadly missed from our reunions to which he has always contributed so much of characteristic cheer and helpfulness, notably so since his election as Assistant Secretary in 1927, for he had taken a marked interest in the activities of the Class and had been of untold assistance to the Secretary.

Entering the Institute in 1879 as a special student he was closely associated with the Class until 1881, when he took the position of chemist and calorist with the Merrimac Chemical Company of Lowell, Mass. He was construction superintendent and general superintendent of the Liondale Bleach, Dye and Print Works, Rockaway, N. J., from 1896 to 1899, and later located with the Boston works of the New York and Boston Dyewood Company as consulting engineer and expert in denatured alcohol with office at 2 Kilby Street, and prepared a valuable work on that subject. In recent years he served as sales and consulting engineer for various industrial activities with his office at 24 Milk Street, Boston. He was born on June 7, 1860, in Chelsea and named after his uncle, Robert S. Frost, philanthropist and mayor of that city. In 1871 he came to Winchester with his parents. On June 22, 1889, he married Miss Carrie Burley, a native of Lawrence, Mass., by whom he is survived as well as

by a son. The funeral at the home in Winchester was very generously attended by members of the Class, eight in number. —WALTER B. SNOW, *Secretary*, Box 652, Falmouth, Mass.

'84 Tyler has been Secretary of the American Association of University Professors from the beginning of its second year in 1916 to the present time. During this period it has grown from small beginnings to a membership of approximately 7,000, with chapters in about 140 institutions. The office, which has been at the Institute, is to be changed to 26 Jackson Place, Washington, D. C. The object of the change to Washington is to put the Association on a more permanent basis with whatever that implies in the way of national contacts, stability and detachment from a particular institution.

One of the many important problems of common interest to the profession is that of appointments. At present men are selected for college teaching in a rather haphazard way by personal correspondence, university appointing offices, and to a small extent, commercial teachers agencies and society committees on placement; but so far these last have not been very much developed in any line. The Association will aim to build up a list of eligible nominees, classified by region, rank and subject in such a way that appointing officers can be promptly supplied with a list of names and sources of advice and fuller information. It is hoped that by June matters may be brought to such a point that work can be continued by others. —AUGUSTUS H. GILL, *Secretary*, Room 4-047, M. I. T., Cambridge, Mass.

'88 An article in the Boston *Evening Transcript* of January 16, 1929, from which the following is taken, is of particular interest to '88 men. It states: "Conowingo is done. One of the biggest water power plants in the world has corralled the mad waters of the Susquehanna and turned their violence into vigor. . . . Done for the Philadelphia Electric Company six months ahead of time and well within its specified cost. Done, in their stride by the efficient organization headed by two Boston men who regard it as an achievement, but by no means the climax of their long career. Stone, of course, and Webster.

"Forty years ago last June they were graduated from Technology. Because they were listed as Stone, Charles A., and Webster, Edwin S., and because Professor Cross's class in electrical engineering was small, they sat side by side throughout the course. . . . It was back in '88 that the first class in America to complete a four-year course leading to a degree in electrical engineering was graduated. The science was newborn. Everyone in it was a pioneer. Only a dozen years before Mr. Bell had heard the voice of Mr. Watson coming over a wire to him from the next room. Half a dozen years before Mr. Edison had carried all the electric light bulbs in the world to New York from his home in Menlo Park; they were

1888 Continued

in a market basket on his arm. It was an adventure even to wire a house in those days. A new problem was waiting to be solved at every turn.

"One has only to watch the fascination which electricity has for boys of all ages today to imagine what a spell it must have cast on the young men of forty years ago, with a whole new realm of knowledge opening before them, a big field, and a fair start. They planned to go into business together as soon as they were out, but their ways separated for a time. Young Stone went to work for some manufacturers of electrical apparatus, while young Webster went abroad and when he returned he entered a bank. Each was restless in the work he was doing and each was eager for the bigger things they saw ahead. Stone had been getting some good practical engineering experience, which, combined with Webster's banking experience, suggested a usefulness in some sort of advisory capacity. They had been inspired by certain remarks of Professor Cross to believe that there was a big field for men, who, instead of going forth to sell, should be competent to advise as experts in electrical projects. When they went back to Technology to tell the professor that they had taken his advice, however, they were disconcerted to find that he had forgotten all about having said such a thing. He was inclined to think that possibly there might be a living in it for one of them, but surely not for two. No, indeed!

"This was a setback, for he was a leading authority in the new science and should know, if anyone did, just what the situation was. But the boys had made up their minds, and doggedly they went ahead. A little two room office at 4 Post Office Square held their two oak desks. For the first few years their work was confined to engineering and construction, but before long they were taking over the management and arranging for the financing of companies. In the early days of the mauve decade the public utility properties were poorly designed and little attention was given to the question of their future growth and expansion.

"The two partners ran up against some amusing experiences in the midst of their hard pioneering work. They were called South to diagnose the ailments of a street railway that seemed to be having a hard time. The President and his wife each owned half the stock. He could not improve the property because she owned a private car. (This car caused all the trouble, as she used it for shopping trips and insisted on leaving it parked on the single track in front of the store until she was ready to move on. Of course this blocked the whole line.

"From designing, building, operating, and financing projects, the natural step was investment banking. Banking houses in those days handled nothing but bonds, so they found it necessary to start their own banking department to promote the sale of stocks in public utilities. And now, backed by forty years of experience, the Stone and Webster organization has finished Conowingo, only one of many

impressive undertakings. It is not the longest dam in the world, nor the highest. Its length is under a mile and its height about 100 feet above the river bed. It is a big dam, one of the biggest, but not record breaking. Its mighty buttressed walls are pierced with fifty spillways closed by steel gates that weigh more than forty tons apiece. . . .

"Somebody recently asked Mr. Stone what he thought of the future of electrical development, whether the past forty years had seen the climax. He answered that while the growth of hydro-electrical power during the past thirty years had been the most rapid of any development in the world, he was sure that they had not nearly reached the climax yet. 'We are on the verge,' he said, 'of a still greater forward movement in applied sciences which is bound to make itself felt in the development of the world during the next century.'"

Your Secretary was pleased to have William G. Besler drop in for a little chat recently. He was over from New York to attend a meeting of the board of directors of the Gamewell Fire Alarm Telegraph Company of which he is a member. — Edward M. Smith was another visitor. Edward still lives in his old home town, North Hampton, N. H., from which he used to commute when at Technology. — Fred J. Wood en route to California, where he will spend several weeks in connection with his fire insurance work, stopped off at Denver, where he had a pleasant visit with Frank M. Ladd. He hoped to see Shepard '87 also. — WILLIAM G. SNOW, *Secretary*, 38 Chauncy Street, Boston, Mass.

'90 Leonard C. Wason, President of the Aberthaw Construction Company of Boston, was elected President of the New England branch of the Associated General Contractors of America, organized at Providence, R. I., on January 3, 1929. — In December the engagement was announced of Joseph C. Burley '27, son of our classmate H. B. Burley, to Miss Ruth Thomas of Brookline.

From a newspaper clipping of December 2, 1928, we have the following: "Charles Hayden of Boston and New York was one of the guests at the dinner party given by Mrs. Whitelaw Reid the past week at her country place, 'Ophir Farm,' at Purchase, N. Y., near White Plains, in honor of the British Ambassador, Sir Esme Howard and Lady Howard, who were her house guests." A second newspaper clipping concerning Charles Hayden, giving his predictions for the coming year in industry, is excerpted as follows [See *The Review* for February, page 218]: "The best augury for a continuation of large and profitable business in the coming year is the fact that in contrast with the wild gyrations in the stock market, actual industry has been conducted along sound lines, is the outlook expressed by Charles Hayden, the well-known banker. On the one hand manufacturers have vigorously confined production to actual consumer demand.

. . . On the other hand consumers have refrained from bidding up prices against themselves, or duplicating orders; there is assurance that orders placed are genuine and will not be canceled. The result is that working capital is today chiefly in the form of cash. . . . A second reason for anticipating good business is that the country has finally grown up to war-time plant expansion. Sudden war needs resulted in the expansion of plant capacity far beyond the normal wants of the country. . . . A third reason for expecting good demand is the restoration of agricultural buying power. The dislocation resulting from the deflation was particularly severe in the agricultural section. It was not until this year that the farmer's dollar was restored to a parity with the industrial dollar. This has now been done. . . .

"I should hope for a fairer treatment of the railroads. The constant nibbling away of rates and increase of wages cannot go on indefinitely without disastrous results. The railroads have given efficient service and have worked out their problems in spite of, not with the assistance of, commissions having to do with rates and wages. . . .

"With the possible exception of a large loan upon the final determination of German reparations, I believe European borrowing from this country has reached its crest. . . ." — GEORGE L. GILMORE, *Secretary*, 57 Hancock Street, Lexington, Mass.

'92 You will be very sorry to learn from the following paragraph that appeared in the Boston *Herald* for January 20 that our classmate, Phillips Bourne met with an automobile accident: "Mrs. Gertrude H. Bourne was killed this afternoon, her husband, Phillips P. Bourne, suffered a possible fracture of the skull, and their daughter, Barbara, suffered concussion of the brain and other injuries when their automobile was in collision with another car here (Clifton, N. J.). The family removed to Montclair a week ago from 6 Symms Road, Winchester, Mass. Mr. Bourne is chief engineer of the Worthington Pump Company of New York." Further details of the accident have not been available as yet. — Arthur Dean is receiving congratulations on his promotion to chief engineer of the Public Works Department of the Commonwealth of Massachusetts. — JOHN W. HALL, *Secretary*, 8 Hillside Street, Roxbury, Mass.

'94 The Class has suffered the loss of a loyal member in the death of Henry Rensselaer Batcheller which occurred suddenly on January 16. Batcheller had recently come to Boston for a short stay before leaving for Oregon to visit his brother. While living at the Engineers Club he had what appeared to be a mild attack of the grippe from which he apparently made a good recovery. While walking across the Common on the afternoon of January 16 he suddenly collapsed, and was picked up and sent to the City

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Hospital, but was dead on arrival. The Secretary had a note from him a few days before in which he told of his plans to visit his brother but stated, "Will be back in time for the Reunion, D. V."

Batcheller was born at Annapolis, Md., February 8, 1873. He was the son of Captain Oliver M. Batcheller, U. S. N. His mother was Margaret Thompson Lyon. Batcheller entered the Institute where he was associated with the Class of '94 and took practically all the work of Course III with additional work in geology and chemistry. He did not work for a degree but after completing the work which he wished to take went into practical mining and for a number of years was engaged in gold mining at San Jose de Gracias at Sinaloa, Mexico, and later was in charge of mining operations at Searchlight, Nev. He then returned to the East and purchased a farm at Washington, N. H., where he and Mrs. Batcheller made their home. He was engaged for a portion of the time in consulting work but always managed to spend most of his summers in the country at Washington where he greatly enjoyed the combination of farming and following his natural hobbies. He was always much interested in the possibilities of a New England farm as a place for specializing and at one time he became greatly interested in the development of special types of poultry.

A year ago last summer Batcheller and his wife made an automobile trip to Oregon and, while there, Mrs. Batcheller died suddenly. Batcheller never entirely recovered from this tragic blow as he and his wife were most devoted companions. The funeral was at Mt. Auburn Chapel on Sunday, January 20. Flowers were sent in the name of the Class. Batcheller will be greatly missed by all of us who knew him well and his circle of friends in the Class was a large one as he generally looked forward to attending our five-year reunions. He is survived by his brother, James H. Batcheller '00, who is a professor of mining engineering at the Oregon Agricultural College.

The Secretary was much pleased to receive a letter from Price a few days ago. He is still living in Paris, but apparently spends a portion of his time in visiting other parts of France. In his letter he states, "Much to my pleasure I have recently run across Maurice Robeson here in Paris. He has built a house at Beaulieu near Nice and spends most of his time on the Riviera. He is the same old Maurice, personification of energy." If it should happen that these words meet the eye of Robeson I hope he will write to the Secretary, if only to recall the days when as freshmen we plodded through the sand to the then unused Harvard Bridge on our daily pilgrimage to the Institute.

The appeal recently sent out by the Secretary for class funds has not only brought immediate response from some two-score members of the Class, but also a number of letters of much interest to the Secretary. At the present writing about \$175 has been sent in, and with what is sure to come, it will be possible to make the preliminary plans for the class Re-

union and to meet certain obligations which it is desirable for the Class to undertake. One of these is to provide a suitable frame for the portrait of Ex-President James M. Crafts which is now being painted for the Institute by our distinguished classmate, Hazelton.

In the class letter, attention was directed to the fact that we still needed about \$17,000 to pay in full for a dormitory unit. One generous member, who would perhaps prefer that I should not call him by name, has offered to give \$2000 more providing the Class will raise the rest of the sum. Here is a sporting proposition and I hope the response will be generous. It is most heartening to have the replies come in indicating intention to attend the Class Reunion in June. Be sure to make your plans to attend as your special friends will be there.

Tenney has just started on a trip around the world but before leaving he stated that he would be back in time for the Class Reunion. Jenckes has also recently started on a similar expedition and stated that he hoped to be back in time to be with us at our Thirty-Fifth. Horace Cray says he is coming, as does also Thropp who, by the way, was recently registered in a Boston hotel but failed to call up the Secretary. Mrs. de Lancey (Miss Gallup), writing with reference to the Reunion, makes the statement that as a member of the Class and a woman, she assumes that in general the men will prefer to be by themselves, so she will not promise to come to meet with her classmates unless some special events can be arranged for our woman members. We shall have to take this under consideration. With Mr. de Lancey she started on January 3 for a trip to Italy, Sicily, Greece and Constantinople. They expect to be met in Italy by their son, Darragh, Jr., who has been spending some time with some of his Princeton classmates in the interior of Russia and have had an opportunity to study to some extent the situation in that country. Apparently Mrs. de Lancey has a mother's thankfulness that her son is now safely out of Russia and headed for Palestine through Persia, and she apparently expects that he will surmount all obstacles and be able to join his parents when they reach Italy. Mrs. de Lancey has given us no intimation of the length of time her trip will take but her remarks about the Reunion would show that she will be back by then.

The class letter brings a response from Dickey in Honolulu who says with reference to the Thirty-Fifth Reunion, "Can't come, but send my aloha." We certainly wish that he might find it possible to be with us, as most of us have not seen him since graduation day in 1894. If these notes meet the eye of any who have not yet responded to the Secretary's letter, he would urge an immediate communication, especially if it can bring the good news of probable attendance at the Reunion, and of course, as secretaries are always grasping, the requested contribution for class funds. — SAMUEL C. PRESCOTT, Secretary, Room 10-405, M. I. T., Cambridge, Mass.

'95 The reconstruction of Vermont highways, made necessary on account of damage done by the recent heavy floods, is a topic discussed by many prominent engineers, and the '95 readers will be interested in a résumé of the discussion by H. K. Barrows: "The flood of 1927 was of course very exceptional. The principal cause of the damage was the tremendous volume of water and its sudden rise to heights that were entirely unknown up to that time. Owing to failure to grasp the situation in some districts a great loss of life resulted. At Montpelier, which is subject to overflow nearly every year, people apparently understood what was going on and remained in their houses, and, although the water level reached nearly to the second floor, there was a surprisingly small loss of life. In fact only one life was lost in that city in spite of the great area of overflow. Another feature of the flood was the tremendous velocity of flow and the resultant scour.

"The state authorities and the people of Vermont felt that they should make an investigation to see what could be done to prevent or lessen the effect of future floods, realizing that they are bound to occur. In the last one hundred and sixty years New England experienced twelve great storms. In Vermont, in 1830, there was a flood the account of which read very much like that of 1927, thus two such destructive floods have occurred in Vermont in 100 years. A thorough investigation has been carried on during last summer by a specially appointed committee of three engineers to secure facts to present to the legislature regarding the whole matter.

"It developed fairly early that the most helpful way of aiding the situation would be by the use of power storage reservoir systems, with flood relief more or less as a by-product. The efficiency of such a storage system was well illustrated by what happened on the Deerfield River in southern Vermont and western Massachusetts last fall. There are two large reservoirs on this river which control 182 square miles out of a total of about 500. As a result, no flood of consequence occurred on the Deerfield River. Without this storage the Deerfield River would have had its place in the newspaper headlines, as did some of the rivers in Vermont.

"The use of detention reservoirs for flood control in a state like Vermont appears impracticable from the point of view of cost. Therefore attention has been chiefly directed toward working out a power storage for each river which would incidentally take care of flood tendencies or reduce the flood hazard to an amount practically to be disregarded. This investigation necessitated extensive survey work, and with the assistance of the United States Geological Survey, we completed surveys in the sections which we considered most useful for the purpose. Some good opportunities exist for storage reservoirs. Storage to be of value must be used in a power development, hence the necessity for a plan for each river, for a scheme of such power development."

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Robert W. Swift has changed his home from New Bedford to Milton, Mass. — Dr. Charles A. Meserve has transferred his headquarters from Kansas City, Kan., to Newport, N. H. — Word has been received recently that Harry W. Cotton, formerly with the American Tube Company, Boston, is dead. No further particulars are available. — Alfred P. Sloan, Jr., President of the General Motors Corporation, spoke at a luncheon of the Boston Chamber of Commerce on January 24, about "Business Prosperity and the Automotive Industry," and T. B. Booth, Frank A. Bourne, H. K. Barrows, Gustavus Clapp, George A. Cutter, E. L. Hurd, W. D. Parker, E. A. Tucker, W. S. Williams and L. K. Yoder attended. The substance of Mr. Sloan's address is included in the article by him in the front of this issue. — LUTHER K. YODER, *Secretary*, Chandler Machine Company, Ayer, Mass.

'96 The Secretaries regret that this is mainly an account of obituaries as we have lost a number of classmates by death. Miss Elvira Wood died December 30, in Cambridge. She was born on February 11, 1865, at West Goulesborough, Maine, and was a special student in the Department of Geology at Technology from 1893 to 1896, after which she became instructor in paleontology from 1896 to 1903. From 1903 to 1907 she was with the U. S. Geological Survey, and from 1907 to 1910 she was a student and part-time instructor in paleontology at Barnard College of Columbia University, where she received the degree of A. M. in 1908, and of Ph.D. in 1910. During 1911 she was curator of paleontology at Columbia, and from 1911 to 1917 assistant to the curator of the Agassiz Museum at Harvard University. In 1917 she became assistant to the curator of the American Museum of Natural History in New York City, but was the victim of an accident during that year which made her a permanent invalid, and since 1917 she has been living in Waltham. She was a member of the Boston Society of Natural History and the National Geographic Society and also the author of numerous papers on paleontological subjects.

Jacob Strader, Jr., died of cancer on December 22, in Cleveland, Ohio, and the Secretary is indebted to John H. Rountree '25, Secretary of the Niagara Falls Technology Club, and George Merryweather for the following account which consists largely of abstracts from *The Tapping Pot*, magazine of the Union Carbide Company. Classmates will remember Strader as a lank individual who went whole-heartedly into everything that interested him. The result was that while at Technology he spent less time in the chemical laboratory than he did in the Chapel where he was a wizard at billiards. He was also interested in bicycling and was considered one of the best bicyclists of his time at Technology. He was a member of that group that came in our Class from Cincinnati, including Dave Beaman, Lloyd Wayne, Billy Andrew, George

Lawson, Billy Anderson, and George Merryweather. He was a cousin of Merryweather's and a nephew of Beaman's.

He was born in Boone County, Ky., just across from Cincinnati, on May 19, 1874, son of Jacob and Alice B. Strader. After leaving Technology he presented himself in Pittsburgh and told one of the steel companies that he was open for a job. They said they were not sure that they had any job, but he, in his characteristic way, told them that he guessed he would come around with his overalls on and they would probably find something for him to do, and they did. In the years prior to 1911 he had established an enviable reputation in engineering with the U. S. Steel Corporation and with the Julian Kennedy Contracting Engineers who specialized in construction of steel plants and other large engineering projects. It was while working on the erection of some large furnaces at Lackawanna that he decided to come to Niagara Falls and associate himself with the Union Carbide Company where his first position was that of works engineer. In 1916 the company sent him to Norway to supervise the erection of the Electric Furnace Products Plant at Sanda. When the plant was completed he returned, and the company thought of giving him some honor in the way of a medal or otherwise for his splendid work abroad, but in his typical way he told them that they might give it to some one else.

After returning from Norway he took charge of the mechanical development work of his company up to the time that he was taken ill several months ago. His ability in development and construction was outstanding and afforded him much satisfaction in following his natural bent for mechanics. Several large mechanical developments stand at the Niagara plant of the Union Carbide Company today as monuments to his ability. Naturally fitted to enjoy all the good things of life and with his sociable nature, he gained many friends, and his deeds of helpfulness were so numerous they could not be kept entirely unknown as he wished. He was one of the leading spirits and, it might even be said, the idol of the Niagara Falls Technology Club. He was a thirty-second degree Mason, a member of the Niagara Club, the Deerpark County Club at Grimsby, Ont., and the most active American member of the Lookout Point Golf Club at Welland, Ont., of which he was also a director. Throughout his last illness, he maintained his characteristic attitude toward life, and when he went to the Cunningham Sanitarium in Cleveland and tried as a very last resort the possibilities of treatment under pressures of three atmospheres, he took the attitude that if there was a chance in a thousand that the treatment would help him, his sporting instinct was warranted in taking that chance. He leaves a widow, Mrs. Lenore M. Strader, but no children. Funeral services and burial were held in Cincinnati.

Jim Haste died on January 7, 1929, and for the following information the Secretary is indebted to George Eastman, Henry

Tozier, and Henry R. Couch '20 Secretary of The Technology Club of Rochester, N. Y. He was born in Bradford, York, England, on March 28, 1867, and came to New England with his parents at the age of four. He was graduated from Phillips Academy at Andover in 1893, and married Hannah M. Hinchcliffe on November 28, 1897, in Cambridge, Mass. For about a year after graduation he was with the Pope Manufacturing Company at Hartford, Conn., and then went with the Eastman Kodak Company. George Eastman has favored the Secretary with the following tribute: "James H. Haste joined our organization in July, 1897. He was a chemical engineer and was assigned to work connected with the development and improvement of transparent film base. He became assistant manager of our Kodak Park Works the first of May, 1905, and manager of the Works in April, 1906. He was elected to the Board of Directors of the company in April, 1923. He filled all of the positions to which he was appointed with conspicuous success. As manager, although a strict disciplinarian, his kindly nature prevented friction with those under him and endeared him to all who came in contact with him. Personally, I was very fond of him and shall miss him very much."

Tozier supplied the following additional information: "With the death of James H. Haste, Technology and the Class of '96 have lost a loyal and devoted supporter. Mr. Haste's death came quite unexpectedly. While it is true that he had not been in good health for some time past, his condition was not considered alarming, and we all thought that if he could only be persuaded to get away from business and take a rest for several months, he would be all right. He and Mrs. Haste did spend a month or more in Hawaii two years ago and when he returned he seemed very much improved. Mrs. Haste's death last July was, of course, a great shock to him, but he took his loss very philosophically, and I think that it did not in any way hasten his death other than to take away the desire to live. Mr. Haste's condition had never been such as to confine him to his home or to his bed, although for some time he has been at the office only a part of the day. After Mrs. Haste's death, Mr. Haste purchased a lot in Forest Hill Cemetery in Boston, and had built a mausoleum in which to place her body. This has just been completed, and Mr. Haste was in Boston during Christmas week to inspect it and make arrangements for taking care of placing his wife's remains in it. While there his condition became worse and he returned to Rochester and died about a week later. The funeral was held at his home, 50 Hawthorne Street, Rochester, on January 10, and both Mr. and Mrs. Haste's bodies were taken on to Boston to be interred there. He had no relatives nearer than cousins. His death was due to a complication of diseases."

Couch reports that Haste was one of the most revered and loved members of The Technology Club of Rochester and

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that during the thirty-two years that he had been with Eastman Kodak Company the organization had grown to the point, under his management, where it had one of the most modern factories in the world and was employing about 6,500 people. Resolutions of sympathy were passed by the Technology Club of Rochester.

Haste was a member of the Genesee Valley Club, Oak Hill Country Club, Rochester Club, Rochester Engineering Society, Rochester Rose Society, University Club of Rochester, The Technology Club of Rochester, American Chemical Society, and also the Rochester local section of the same, Archaeological Institute of America, and the New York State Archaeological Association. He was also a director in the Lincoln-Alliance Bank and a subscriber to the Rochester Community Players and the Memorial Art Gallery.

Classmates will sympathize with Bert Thompson in the death of his wife which occurred December 23. She was Miss Hildreth Nesmith, daughter of the late Thomas and Florence Hildreth Nesmith. For many years the Thompsons resided in Manchester while Bert was with the Amoskeag Corporation, but for the past eighteen years the family had made their home in Lowell where Mrs. Thompson took a prominent part in the social and philanthropic life of the city.

The Secretary was surprised and pleased to receive a short call on January 25 from George Merryweather, who was accompanied by his wife and daughter. He had been to New York to attend the marriage of his brother, Hubert, and was visiting eastern colleges in order to make a choice of the one which the daughter desired to attend. Merry reported that Bakenhus and his daughter had recently called on him in Cleveland. — The Secretary has not yet seen Henry Gardner but has found out definitely that he is in Waltham, Mass., at 87 Rumford Avenue, where the Comtor Company is located. This company specializes in the production of accurate gauges, blocks, plugs, and so on, for perfecting the accuracy of all kinds of machine work.

The last word from Billy Anderson before he sailed on his round-the-world tour on January 5 was that he had heard from Mark Allen, who reported that he was also going around the world on the S. S. *Resolute*. This indicates that these two old chums and their families will have a wonderful trip together. — Gene Hultman has recovered from a siege of the gripe and is planning on a vacation trip with Mrs. Hultman. Exact details are not available but it is presumable that Gene will have gone somewhere to escape the rigors of New England during the months of February and March.

H. C. Lythgoe has acquired frontpage prominence in Boston papers on account of Boston police activities. Lythy is apparently in bad with the police, who claim that samples of seized liquors when submitted to Lythgoe's department in the State House are not analyzed correctly for their alcoholic content, and that out-

side analysts obtained different results which are higher. In view of the fact that these liquor samples are transported in unsealed containers which offer ample opportunity for manipulation when being brought to the State laboratory or taken away, it would seem as if the police would have difficulty in proving that any irregularity existed in the analytical work while samples were actually in Lythy's charge. The final outcome will be awaited with interest. — CHARLES E. LOCKE, *Secretary*, Room 8-109, M. I. T., Cambridge, Mass. JOHN A. ROCKWELL, *Assistant Secretary*, 24 Garden Street, Cambridge, Mass.

'98 Arthur F. Howard, died suddenly in a hospital in New Haven on December 5. Howard was born in Portsmouth, N. H., in 1873. After being graduated from Amherst in 1895 in the same class with President Coolidge, he studied electrical engineering with us, and he started his career as foreman with the Boston and Maine Railroad. From 1899 to 1925 he was assistant superintendent of the Portsmouth Electric Railroad. Since 1925 he has been in the insurance business in Portsmouth. Besides occupying a commanding position in his business, he has been a leading citizen of his city and state, having served on the City Council, been police commissioner, and served on the New Hampshire Legislature. The numerous press clippings that have come our way attest to the high esteem and affection in which he was held by his fellow citizens.

Hardly a month goes by that we do not see Roger Babson or Charlie Winslow prominently mentioned in the newspapers, often several times a month. For fear of being monotonous we comment only very occasionally upon them in these notes. However, a picture in the Boston *Evening Transcript* for January 19 assailed our eye and was such a striking likeness of Charlie Winslow in his most dignified pose that we could not refrain from clipping it out and saving for these notes the following extract from the reading matter below the picture. Particularly appropriate at this time is this clipping because Professor Alice Hamilton of the Harvard Medical School spoke recently on the Health Work of the League of Nations, speaking in appreciation of the work done by Winslow in organizing the health work in Russia at the time of utter chaos there. "Dr. C.-E. A. Winslow of New Haven, Conn., will be one of the speakers at the evening sessions of the conference on Mental Hygiene in Public Health and Social Work, held at the Boston Chamber of Commerce Building on January 29. Dr. Winslow, Lauder Professor of Public Health at Yale Medical School, and formerly biologist-in-charge of the Sanitary Research Laboratory at the M. I. T., is one of the foremost authorities in the country on public health and the author of many books on that and allied subjects. In 1917 he was a member of the American Red Cross Mission to Russia, in 1921 was general medical director of the League of

Red Cross Societies at Geneva, and since 1927 has been expert assessor of the health committee of the League of Nations."

Everett N. Curtis is giving up his office in New York and is about to move to California. — Seth Humphrey has finished his book covering his travels in South Africa, and it is now in the hands of the printers. If it comes up to his previous book it will be very much worth reading. We have already heard him give a lantern talk on Africa and felt the charm of his personality as well as the interest of the subject.

Our children, even our grandchildren, are coming forward. Some of us are already shoved aside. Before long the next generation will have taken most of the burdens from our shoulders. Ernest Russ's oldest boy is in business. The other day Mrs. Russ gave a reception for the charming young lady that Rodman is to marry. The younger son, Philip Russ, entered Wesleyan this year. — George H. Sistar, Jr., grandson of Edwin R. King, entered Technology last September to study electrochemistry.

The following clippings are taken from the *Engineering and Mining Journal*: "Professor F. C. Gilbert of the Montana School of Mines, Butte, Mont., visited the Inter-mountain Station of the U. S. Bureau of Mines at Salt Lake City recently to confer with the staff there concerning the treatment of oxidized zinc ores." — "F. F. Colcord, Vice-President of the U. S. S. Lead Refinery, has returned to New York after a visit to the East Chicago plant of the company, which is a subsidiary of the U. S. Smelting, Refining and Mining."

The following news just arrived from Ernest Russ: "I know you will be interested to hear that Howard Bodwell has been made manager of the American Sheet and Tin Plate Company plant at Vandergrift, Penna. This is a big proposition, as you may know, and they employ over 3,000 men. Mr. Barret, who was the manager, becomes assistant to the Vice-President of the company in Pittsburgh. He is one fine fellow also, as I know because I played golf with him two or three days. By the way, Howard writes that his name did not get in as being one of the members who attended the Thirtieth Reunion." Funny, but Howard in his modesty would never have thought to send in word of his professional achievement. It is always a friend who must be relied on for such a service. Yet he noticed that his name was somehow left out of the list of those at the Reunion. He was in fact very much at the Reunion, and he and Mrs. Bodwell contributed their full share and more to the success of that event. — ARTHUR A. BLANCHARD, *Secretary*, Room 4-160, M. I. T., Cambridge, Mass.

'99 "Where are Arthur Hamilton and Hilda the Lion Hunter?" asked the Editors in The Grab Bag of the February issue of The Review. I had been asking myself that for some time, realizing that when last heard from they were on the high seas along with

Tommy Robinson, who was seasick but not calling it that. It was a weighty question, and then one day while battling the traffic in New York City, who should I see but Arthur Hamilton surrounded by bags getting into a taxi. Before we could do more than say hello, the flivver had pirated him away. Arthur had had an attack of the gripe but had almost recovered. He has the combined sympathy of all who have had the gripe as well as of all those who hope to escape it. He says he is going to "The Pasture" in February, and then on to France in March. It is hoped that he will return before the Reunion in June. What would a reunion be without Ham!

Tommy Robinson is too modest to tell us anything about himself or his new play, "Be Your Age," but Arthur Hamilton is authority for its being an interesting and subtle comedy which should furnish amusement for the discriminating. He then defines discrimination in ironic vein — not a bad definition either — as "that quality one possesses and compares other tastes with." Page Noah Webster. The play, it seems, is on the road, and it is the duty of every member of the Class of '99 to watch for it in the theatrical announcements and go to see it.

Walter Whitney has been down in the Carolinas but is going north this week. — Harold S. Graves and Thomas Byrd Epps have formed a partnership for the practice of architecture with offices at 18 Newbury Street, Boston.

While looking over a technical publication some time ago your Secretary saw a headline "Fresh Gloucester Fish — Fresh Through Quicker Freezing at 45° Below Zero." It was an enticing line, for I like fish, especially Gloucester fish. I read a bit further and learned about fish and the transportation of fish in "dry ice" which is nothing more or less than solidified carbon dioxide. I discovered that "Bringing Chicago to Gloucester" was neither a daydream nor a pipe dream, but a real achievement of The General Sea Foods Corporation, of which one of the moving spirits is Bassett Jones. In a letter to me he went into some detail concerning his work and his interests since 1921 when he and his associates found the fishing industry so backward that it offered a marked opportunity for scientific approach. They made a careful study of the entire industry, its methods of production, economics, business distribution and marketing, and by research eventually developed machine processes for handling, dressing, and packing fish. The result of this research was the founding of The General Sea Foods Corporation, which is now doing twenty per cent of the total Boston fresh fish business and which is building a fleet of vessels designed to dredge and handle fish as a new cargo and to bring that cargo to the plant in proper condition. The General Sea Foods Corporation is to the fishing industry what Mazda is to the lamp industry.

"Since 1921," writes Bassett, "my energies, my thinking, and my waking hours have been pretty well absorbed in

fish and elevators, seemingly a strange combination. But, after all, engineering is rather a form of approach than a matter of what is approached." This last bit of erudition I heartily subscribe to, and the Class as a whole can sit up and take notice, for with two definitions in one issue it may well be remarked that we can "Be Our Age," apologies to Tommy Robinson, and still be modern. — W. MALCOLM CORSE, *Secretary*, 810 18th Street, Washington, D. C. ARTHUR H. BROWN, *Assistant Secretary*, 53 State Street, Boston, Mass.

'00 A letter from Jim Batcheller is at hand and if it weren't for Jim, Ingersoll Bowditch, Stanley Fitch, George Russell, and a very few others, it is doubtful if this column could long exist. Jim was East last summer, making this trip by auto and meeting his family as he did the year previous. He writes: "We had a good time and enjoyed immensely a visit from Bob Leach and his charming wife, which visit we returned by stopping in Fairfield on our way West. Bob is now a grandfather, as his oldest daughter has been married several years. The other daughters are either through college or just entering. We saw them all, and they are a joy to see and know. On our trip West, we visited my old mining haunts in the Black Hills, thence to my favorite fishing holes in Sand Creek, Wyo., then the Big Horn Mountains and through wonderful Tensleep Canyon, Shoshone Canyon, Yellowstone Park, and home via Columbia River Gorge. Some trip! I wish all you knighted, stuck-in-the-mud Easterners would come West and know your own country." To which cordial invitation we replied that if the day ever came when the mud in the East became as thick and disgusting as that of the Middle West, we would be delighted to visit the desert-cursed, God-forsaken, rocky, barren lands of the glorious Far West.

The October number of the *Engineering and Mining Journal* bore the news of the death of Robert P. Roberts in Tasmania, whither he went in 1912. After leaving the Institute, Roberts was for some years on the staff of the Anaconda Copper Company at Great Falls, Mont., as general smelter foreman. At the time of his death he was chief metallurgist for the Mount Lyell Mining and Railway Company, Queenstown, Tasmania. He died from cerebral hemorrhage on Tuesday, September 11. And thus another of our beloved classmates passed in final review. Robbie was sterling and none better ever sat on old Rogers steps.

Press despatches advise us that Stanley Gay Hyde Fitch and family spent a portion of last season abroad, but association with the royal families seems not to have changed our genial Stanley.

Walker Memorial witnessed another one of the world renowned dinners of the Class of '00 in the shape of a Fathers and Sons Night, January 24, engineered by our retiring but never tiring Secretary, Professor George E. Russell. A delightful evening was the vote of some twenty-three

of the old members and nine of the sons. The following appeared: Brigham, Ashley, Bowditch, Burns, F. N. Conant, Corring, Cutting, Davis, Bugbee, Fitch, Ingalls, Osgood, Patch, Richardson, Silverman, Smith, Stearns, Walworth, Warren, Wedlock, Russell, J. B. Conant, and Everett. The sons were: Lindsey Brigham, Hamilton and Winthrop Conant, Duncan and Roger Corring, John B. and Isaac Osgood, Jr., Edmund Russell, and Douglas Everett. The feature of the evening was the address of Charles E. Smith, Vice-President of the New Haven Railroad, who gave us a detailed account of his activities since leaving the Institute. This was one of the most interesting talks we have had and one and all agreed that the New Haven is indeed lucky to have the services of so able an official. He surely knows his bridges.

Mention should be made of the services rendered the Class during recent years by George Russell, the retiring Secretary. The amount of time he has given to the detail of the job has resulted in keeping us together over this period. Press of business requiring his full time is the only reason that he is asking for a relief and it is with regret that a substitute is called in temporarily. Said individual would be indeed glad to hear of news of interest to the Class. — C. BURTON COTTING, *Secretary*, 111 Devonshire Street, Boston, Mass.

'01 As General Bramwell Booth once so happily said, "You can't keep a good man down unless you keep him out," which is not an introduction to the fact that our good friend the Strawberry King who some time ago left the sylvan solitudes of Maine to pursue his agricultural studies with that staple product corn, has just been elected President of the Public Utilities Association of Virginia. This happy event occurred at the annual convention held in Roanoke just before the beginning of the new year. As those of you who read these notes will remember, Al is the Executive Vice-President of the Virginia Public Service Company with headquarters in Charlottesville and branches in nearly 200 of the larger centers of the state.

Matthew M. Cushing of Course IX is located at Saratoga, Wyo., and gives his occupation as that of cattle raiser. It has long been a recognized fact that the educational plan at Technology is sufficiently broad in its scope to fit a man for any type of employment that he may subsequently elect to follow. So far as I know, Cushing is our only cattle raiser, although several of the Class have large families. It is peculiarly appropriate that a graduate of Course IX with its splendid literary tradition should undertake this line of work, for I am creditably informed by those whose contact with the great open spaces is more intimate than my own that the principal job in herd riding today is to tell bedtime stories to the cows. And with the gradual spread of illiteracy engendered by the radio it is pleasant to think of the tradition of Addison and

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Steele kept alive by one of Arlo Bates's stalwarts. Strepthon sporting with Amarylly and a survival of the fine Greek pastoral simplicity. There is a thought here for Phil Moore.

Ted Brigham has recently touched the far West though merely as a transient visitor from the effete East. With Ted's saccharine affiliations — he is plant engineer of the New England Confectionery Company — it was inevitable that the cloying sweetness of the simple life of Hollywood should have exercised an uncontrollable attraction for him. He made one or two efforts in the movies under an assumed name, which, of course, ruined his amateur status, and I understand that he also spent some time in the contemplation of new theological concepts as voiced, loudly, by Aimee Semple McPherson. Unsticking himself, however, from the honeyed lilt to her sweet but never mawkish oratory he has returned to the safer if more prosaic confines of his job. Besides, he never did care for swimming. On his way home he made a survey of the national parks and feels on the whole that a commendatory word may be said for them although they are perhaps too expressive for conservative New England.

Norman Skene now a well-known yacht designer, writes in to say that he is busy raising one family. There would seem to be both ostentatious virtue and a vague disparagement of the celibate members of the Class in this simple statement. As a naval constructor, however, Norman has made his mark and I delete his sentence of any occult implication.

Al Sulzer is still giving the Eastman Kodak Company the priceless benefit of his counsel, advice, and artistic genius. I understand he has so far identified himself with the interests of Technology's first citizen that he is developing Russian dancing as an avocation. He and Ted Brigham should have much to talk over together. Al as a producer, Ted, a consumer, and a joyous Saturnalia. Cushing might like to sit in on this to make the Trinity complete.

The censor has just ordered the confiscation of the entire edition of Frank Walker's latest contribution to naturalistic literature put out under the disguising caption "The Theory of the Application of the Base Plate to an Arc Welded Rail Joint." Frank would probably have gotten away with this, but it received an honorable mention in the recent Lincoln Arc Welding Prize Contest, and the guardians of public morality, ever watchful for subtle assaults on the public mind, at once instituted an investigation.

Ted Davis, he of the corn-cob pipe and mural adornment reminiscent of the "left bank," writes pathetically that he is still termed a statistician in spite of the fact that his avocations, for which he draws a salary, involve everything sub-lunary except statistics. Edward has become a metaphysician, a disciple of Einstein, and is coping with the problem of increasing the rate of motion by several thousand per cent while remaining stationary. To one whose training has been in the simple lines of engineering, this

would seem to engender a friction most subversive to the continuance of the integrity of the seat of what in early childhood we were taught to call pants. I assume the accelerating force to be applied at this point as the gravitational center of the domestic universe. Ted is in touch with both Putnam and Philbrick, the latter, I understand, wasted to a shadow of his former robust self. Joe is getting in training for the thirtieth anniversary and he is too good an engineer not to realize that Herbert Spencer's law of cell growth is not directly applicable to *genus homo*.

Farnum Dorsey sends only his name followed by a cabalistic 2. I presume the deletion of the "me" is in accord with best telegraphic practice, but it seems to me to savor a little too much of New England thrift. — Bob Williams is still with the Submarine Signal Corporation and engaged in research work along developmental lines. Bob has become one of our great travelers, and, while his radius has not quite the same sweep as that of Freddy Clapp, he is on intimate terms with the flora and fauna of two continents. For those of the Class who are primly minded, I would add that this does not imply moral dereliction.

Within the past few days I have had a long and interesting letter from Charlie Tufts who is now engaged in a large nitrogen fixation development scheme. Reminded by the provocative data sheet, Charlie made a modest contribution to the class finances. I mention this for two reasons, first because I wish him to have full credit for a financial rectitude to which I wish others aspired, and second because I had recently had occasion to look over the class finances. I reread a few days ago the letter which I sent out urging you to support the many worthy projects of the organization which you adorn, and I am free to confess after I read my own moving words that I fail to understand how any of you can be deaf to my piteous appeal. It has occurred to me that it might be helpful if I could arrange to have your contributions made deductible on your income tax reports. Certainly the Class is a benevolent institution and some of its members have demonstrated concretely that they regard it as charitable. I suppose, however, it would have to be incorporated to enjoy this benefit and with the legal status that this would confer we might be tempted into those realms of higher finance for which most of us, at least, are ill adapted. It is probably better that we should remain as we are. So to those who have paid their dues I extend my grateful thanks, and to the others — note the dull red slowly mantling the brow — my fervent hopes. — ALLAN W. ROWE, *Secretary*, 4 Newbury Street, Boston, Mass. V. FRANK HOLMES, *Assistant Secretary*, 250 Stuart Street, Boston, Mass.

'02 At this writing Lou Cates's name has been mentioned in the press from various sources as being considered for Secretary of the Interior in Hoover's Cabinet. We don't know what the betting odds on the proposition

are, but even considering that any one name suggestion is a long shot, still '02 feels somewhat set up to have one of its members prominently mentioned for a cabinet post. Of course, Cates's work in the field of mining engineering is too well-known to need comment and would naturally bring him under favorable notice of a man with such a wide knowledge of that field as Mr. Hoover possesses. Some years ago Secretary Hoover appointed Cates to the Advisory Board in connection with the Bureau of Mines. Presumably the decision of the President-Elect will be known very soon after these notes come out in print.

Ritchie is living at 22 Dunster Road, Chestnut Hill, since his marriage last August to Mrs. J. P. Dinsmoor. — FREDERICK H. HUNTER, *Secretary*, Box 11, West Roxbury, Mass. BURTON G. PHILBRICK, *Assistant Secretary*, 246 Stuart Street, Boston, Mass.

'04 Dear Classmates: I do not very often receive letters from you fellows so I am going to take this opportunity to take my pen in hand, or rather, call in my stenographer and dictate a letter to you. I have not very much news to write you at the present time, but will do the best I can to inform you as to the acts of some of our fellow classmates.

All of you who can remember as far back as our freshmen days will recall that Charlie Stebbins was one of our famous athletes and was always greatly interested in sports. After his college days he played a considerable amount of tennis, and at one time he was nearly champion of the east side of Melrose. He has always kept up his interest in athletic events and sports of all kinds. All this is a preface to his latest effort in the line of athletics. About January 1 the Boston National League Hockey team, the Bruins, was very short of material, and business being slack in the wrought iron pipe line, Charlie decided that he might as well try out for a place on the Bruin team. Therefore he started his practice with his son Jarvis and a number of other boys of like age. Charlie was performing nobly, but got his right foot in the way of a flying puck, as a result of which two of his toes were broken, confining him to the house for several weeks and putting an end to his aspirations as a hockey player, and permitting George Owen to get the job with the Bruins. Charlie assures me that he is through with the more strenuous phases of athletics and will probably pay more attention to golf the coming year.

I am again indebted to Professor Locke for a clipping from the *Engineering and Mining Journal* which states that Fred W. Horton has been employed by the United States Bureau of Mines as mineral economist to make a study of the mica reserves of the United States, particularly as they involve the interests of the War and Navy Departments. — A clipping from the office of The Review brought out the fact that on December 3 a meeting of the American Society of Heating and

Ventilating Engineers was held here in Boston at which Arthur Willard of the University of Illinois gave a talk on "The Ventilation Problem of the Holland Vehicular Tunnel under the Hudson River." Unfortunately I did not know that Willard was to address this meeting, and Willard probably forgot that I lived in Boston so we did not get together on that occasion, much to my regret. Willard is at present President of the American Society of Heating and Ventilating Engineers, and the ventilating system of the Holland Tunnel was designed under his supervision.

Under date of January 11, I received a letter from Bill Eager which gave me no information regarding Bill but enclosed a letter which he had received from Don Galusha which is quoted here. "As of the beginning of last year, Dwight P. Robinson and Company, Public Service Production Company, U. G. I. Contracting Company, and Day and Zimmermann Engineering and Construction Company were consolidated. While the separate concerns will still operate to some extent under their former names, the majority of the business is being handled under the new firm name of United Engineers and Constructors, Inc., whose headquarters are 112 North Broad Street, Philadelphia, adjacent to and connected with the U. G. I. Building.

"I moved here on October 1. I have been laid up for some weeks in the meantime, consequently I have not yet become much acquainted with Philadelphia and do not know whether I shall be enthusiastic about it or not. I am sailing for Europe on Friday of this week for an extended business trip, probably for three or four months. I am hopeful that it will not be so long as to prevent my attending our Twenty-Fifth Reunion this year, at which time I hope to see you again."

I am sure I hope that Don will be back in time for the Twenty-Fifth Reunion as we have not seen him on those occasions for several years. Preliminary plans and preparations for it are already well under way, and I am sure that the Reunion will be one well worth attending and that you will regret it exceedingly if you do not attend it. Specific announcements concerning the Reunion will be forwarded later and I hope that we will be able to exceed considerably the attendance at our Twentieth Reunion.

I received a Christmas card from Selskar Gunn which announced that he and his family were all well and that he had been in the United States during the month of November but was so busy that he did not get to the hub of the universe on that trip. He also hopes to be present at the Twenty-Fifth Reunion.

Now I come to the point where it is necessary to bring this letter to a conclusion. If any of you fellows have ever written a letter which was hard work to keep going until you came to the end of the page, you will appreciate all the more the efforts I made to give this epistle a decent length. When you dictate a letter you cannot tell how long it will be until you see it typewritten. After this one is

typewritten no additions can be made because I shall be out of ideas. Due to delays in transmission over which I have no control you will probably not receive this communication before March 1, at which time most of the news in it will be old stuff. No effusion of mine in the Class Notes would be complete without some words to the effect that I am still in hopes of receiving a vast amount of news from my classmates at some time or other, and having put this idea before you, I will now close with my best wishes. *Yours Four-ever.* — HENRY W. STEVENS, *Secretary*, 12 Garrison Street, Chestnut Hill, Mass. AMASA M. HOLCOMBE, *Assistant Secretary*, 3305 18th Street, N. W., Washington, D. C.

'05 According to the general executive bulletin of the Bell Telephone Laboratories: "The situation created by the sudden and untimely death of E. P. Clifford during the absence of Executive Vice-President Craft on extended sick leave, has made necessary a change in organization. Effective December 24, 1928, H. P. Charlesworth will be in charge of all laboratories operations during Mr. Craft's absence. He will be elected Vice-President at the next meeting of the Board of Directors. From the date of his appointment and until further notice all department and branch heads heretofore reporting to Mr. Craft or Mr. Clifford will report to Mr. Charlesworth. In the American Telephone and Telegraph Company, Department of Operation and Engineering, W. H. Harrison is being appointed Acting Plant Engineer to take over Mr. Charlesworth's work during the latter's absence." In regard to the above Frank Chesterman writes: "I am certainly pleased to see this, and I am sure that Harry will do a real job, although he would be the last man in the world to tell you anything about it. It is interesting to see how things come about, because when Harry and you and I and the rest of us were students up at the Institute, Dr. Jewett was the instructor under Harry Clifford in charge of us undergraduates, and here, after twenty-three years in business, the former student and instructor come together again in this fashion."

Bill Motter, just back from his inspection trip to the mines of the Chile Copper Company, writes: "We were away a little more than eleven months, and while the trip to Chile was interesting, we are particularly glad to get home. Perhaps some of this elation is due to the fact that in going away we expected to be gone only about three to four months, and, when a trip of this nature drags out to such an extent, it becomes tiresome. This was especially the case, since we were in Santiago and living in a hotel instead of at one of our camps. Furthermore, we have had reservations on every north bound steamer since last May."

On a card sent from Santa Barbara, Calif., Herb Wilcox wrote: "Spent last night here and it's hard to leave. Am en route to San Francisco by auto for the week-end. Saw the Rose Tournament in Pasadena on New Year's Day." — When

the Soconyland radio sketch of New Year's Day took us to Newburyport we thought, of course, the scene would be Mayor Bossy Gillis's filling station and fully expected to hear enacted his arrest by Ed Coffin, but the opportunity was missed. — Andy Fisher is selling advertising for the *Textile Review*, but we don't know whether he has quit the dye stuffs game. — For some reason there have been very few notes from the members of Course I this year. — Bob Adams has left that place with the unpronounceable name and now gives 15th and Harrison Streets, Oakland, Calif. — In opposing the issue of a license for a garage between Beacon Street and Bay State Road, Sid Strickland told the Board of Street Commissioners that he did not read the tabloids. He's a member of the Brookline School Board, you see.

Harry Nabstedt wrote on December 31: "Since writing you from Tijuana, L. C., Mexico, the work progressed to the point of pouring concrete for Rodriguez Dam No. 1. Mrs. Nabstedt and I then spent several weeks seeing California, Utah, and Colorado. We reached Davenport late in October. We followed up this vacation by sending me to the hospital for an operation or two, and since then I have been recuperating and am not only feeling just fine, but have gained weight as well. Am leaving tonight for New York City for a few weeks, after which I expect to take over the Pacific Coast territory for the Ambursen Construction Company where I shall be located in San Francisco, my business address there being Alexander Building."

In reply to our inquiry, Mrs. Elizabeth Middleton Maddock says, "Being a grandmother is rather a doubtful honor, but, if it brings glory on 1905, I am delighted to hand on the information. Thomas Maddock Dickens was born October 5, 1928. The rest of my family is in school. Tom Maddock may arrive at Technology in 1930." Is this the class grandson? We don't know a thing about eligibility rules. S. O. S. — We didn't do Roll Prichard justice last month. It is true that his son is engaged to Miss Carol Martin of Woodbridge, N. J., a senior at Wellesley; but furthermore, his daughter's engagement to Roger Sprague Haskell of Lynn has also been announced. — Arthur Abbott wrote down to see whether we could find him a representative for Connecticut to handle his electrical line. Shortly afterwards Dan Adams inquired, "Is there at Bermuda a sailboat, small, tractable, easy gaited? If so, could one obtain temporary possession?" Do they mistake us for a travel agency or an employment bureau?

Bill Spalding writes, "After January 1, I will be with the American Cyanamid Company, 535 Fifth Avenue, New York, (manufacturers of acids, cyanides, resins, fertilizers, and so on). During the past year I have spent much time in Canada, organizing sales for a Canadian firm and designing a plant for manufacturing asphalt emulsions. Last week at the University Club, I listened to Dick Marsh talk about his white Indians and pre-

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historic peoples for four consecutive hours. It certainly was as interesting as any lecture I ever heard and I could easily have listened for four more. Life here has seemed dull ever since. He is the only specimen of *homo sapiens* that has yet been able to divert the Club bridge fans from their Saturday midnight game."

At your Secretary's instigation, Norman Lombard came to Middletown on January 10 and addressed a local club on "Rising and Falling Prices." He drew an interesting picture of the ups and downs of the price level, explained the hardships incident thereto, and described briefly several methods proposed for stabilizing the purchasing power of the dollar. He put the whole thing across in a masterful manner. For three years he has been executive director of the Stable Money Association, a nation-wide, non-partisan organization which is working to promote stabilization of the purchasing power of money. Last fall Norman accompanied the President of his organization, Dr. Kemmerer, the internationally known authority on currency, to the Pacific Coast and gave several addresses. Norman has two boys and three girls and is living at Sound Beach (a part of Greenwich), Conn. The older boy is at Rollins College, Fla., where, we are told, they do things in a different way. But Norman says his boy is an odd chap like his dad, and there you are. It was twenty-three years since we had seen our freshman President and, although he had taken on some weight, like most of you, he was the same old Skee and it was a delightful reunion. — ROSWELL DAVIS, *Secretary*, Wes Station, Middletown, Conn. SIDNEY T. STRICKLAND, *Assistant Secretary*, 20 Newbury Street, Boston, Mass.

'07 Without doubt many '07 men are doing things of special interest to themselves and to the rest of us in the Class, but the one item that the Secretary knows about is the following: Edward H. Temple, Jr., who has been actively associated for twenty years with Aberthaw Company, as Vice-President and General Manager for several years, resigned from that connection about January 15 of this year. George A. Crane, who for the past six years has been chief estimating engineer for the same firm and who has been Ed's close associate, has also resigned. George and Ed have formed a new company, Temple and Crane, Inc., which will engage in a general construction business with offices at 80 Federal Street, Boston. From The Review Office comes the following clipping, taken from *Science*, dated August 24, 1928: "Captain Emory S. Land, assistant chief of the Bureau of Aeronautics of the Construction Corps of the United States Navy, has been appointed Vice-President of the Daniel Guggenheim Fund for the Promotion of Aeronautics. The Navy has released Captain Land for the period of one year." — BRYANT NICHOLS, *Secretary*, 2 Rowe Street, Auburndale, Mass. HAROLD S. WONSON, *Assistant Secretary*, Int. Shoe Company, Manchester, N. H.

'08 The annual meeting and bi-monthly dinner of the Class was held on February 12, at Walker Memorial. The question of an informal get-together for a few days next summer was talked over; and while there will be no regular reunion, if any of the fellows are interested in a few days at the Cape some time in June, it will be appreciated if they will let the Secretary know.

We were sorry to learn of the death of Robert A. Angus, which occurred September 3, at Mt. Vernon, N. Y. — Philip J. Hale is now located in Youngstown, Ohio, address P. O. Box 18. — Harold L. CARTER, *Secretary*, 185 Franklin Street, Boston, Mass.

'09 Now is the time to make your plans to attend the Twentieth Reunion June 15 to 17. Detailed announcements will be sent out later, but, in the meantime, make a note on your calendar to save those days for the Class of '09. Nisbit dropped into the Secretary's office a few days ago to inquire about the Reunion. He expects to bring his gang up from Maine. We should give the Reunion all the publicity we can and talk it up whenever we see one of our classmates. Let's make this Reunion the best ever. — Horace Clark, who has been associated with Metcalf and Eddy for about two years, has now left their employ and is associated with Royce Gilbert of the firm of Chase and Gilbert, 250 Stuart Street, Boston.

From the office of The Review comes the following clipping taken from a letter to the Editor of the New York *Sun* of January 16: "The man who should receive the Fusion nomination for Mayor of New York is a consulting engineer, Thomas C. Desmond, President of the New York Young Republican Club. Although a Republican, Desmond would command the support of civic organizations and independent Democrats because of his record in charge of many important business undertakings and his demonstrated efficiency as an engineering executive.

"There are many lawyers in public service already. But the American public has shown that they heartily approve of engineers as public administrators by the overwhelming vote given to Mr. Hoover. If Thomas C. Desmond is nominated, as he should be, on a Fusion-Republican ticket for Mayor of New York, he will be elected." — CHARLES R. MAIN, *Secretary*, 201 Devonshire Street, Boston, Mass. PAUL M. WISWALL, *Assistant Secretary*, Postum Company, 250 Park Avenue, New York, N. Y.

'11 Maybe there has been a time since we graduated when your Secretary has had less material at hand with which to prepare notes for this section, but I doubt it. An inexplicable lethargy has mantled the mates, and nobody writes to Dennie. A word to the wise is worth two in the bush.

Bob Morse, VI, is now with the American Gas and Electric Company with headquarters at 30 Church Street, New York,

having made the change from Brooklyn Edison in December. He and Mrs. Morse still maintain their home in Brooklyn and will probably do so until summer. — Well, well, good old 1911 now has one of its members enrolled in the list of eminent men who deliver Popular Science Lectures in the regular series given each year by the M. I. T. Society of Arts. Professor Gordon B. Wilkes gave the mid-January lecture and demonstration, his subject being "Artificial Cold and its Applications." Gordon has been doing much valuable work along these lines in connection with his lecture and laboratory course at the Institute. His talk was accompanied by experiments on the production of low temperatures, and the properties of gases in the liquid and solid states. [See his article in this issue — The Review Editors.]

Word comes to hand indirectly that Bert Fryer, VI, is Vice-President and General Manager of the western division of the new General Dry Kiln Company, recently formed with headquarters at Seattle by merging several Portland, Seattle, and New Orleans dry kiln companies. — Here in Massachusetts we noticed that on the list of fortunate individuals who receive rebates of a portion of their income tax as paid in 1928 were the names of two 1911 men, John L. Bagg of Millers Falls and Emmons Whitcomb of Winchester. Lucky devils! — Doubtless Paul Cushman, VI, is again on the crest of a wave, as Harry Richman would croon, for word reaches me that he is now on the faculty of Vanderbilt University, Nashville, Tenn. He is Professor of Mechanical Engineering there. We all wish him luck.

Professor Locke of the Department of Mining and Metallurgy at the Institute tells us that Rudolph Emmel, III, is now with Northern Peru Mining and Smelting Company, at Trujillo, Peru. He transferred there from Mexico in December. — There are the records, mates. Judge for yourself whether you can help make them more interesting by obeying that impulse to write to Dennie. — ORVILLE B. DENISON, *Secretary*, The Lamson Company, 213 Congress Street, Boston, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

'12 New York lifts up its head and chirps again! Why shouldn't it? At least it can muster a respectable turnout of the Class every once in a while. The first meeting of the New Year was held early in January, when twelve (count 'em) '12 men sat down at luncheon in the Grill Room of the Fraternities Club Building, the new quarters of the Technology Club of New York. Those present were: Walter F. O'Brien, II; Norwood A. Hall, VI; Percy L. Flansburg, VI; Ralph M. Ferry, II; William C. Bird, I; William A. Rhodes, VI; H. Malcolm Priest, I; Harold H. Griffin, II; Leroy A. Matthews, VII; Robert J. Wiseman, VI; Harold W. Danser, VI; and David J. McGrath, I. By the time these notes appear in print there will probably have been another meeting,

as two of the brothers made a heart-rending plea for an evening party, which they propose to use as an excuse with their better halves, to get a pass for one night out.

L. A. Matthews, VII, has been with the Pease Laboratories, at 39 West 38th Street, New York, practically continuously since leaving the Institute. He is now in the department of bacteriology, supervising the work of several assistants in the wide variety of laboratory testing work which this organization handles. He tells us that one phase of the work extends to the actual inspection of sanitary conditions in the kitchens of several of the larger New York City hotels and their methods of handling, storing, and preparing foodstuffs. Another interesting angle of his work is in connection with a research job on the succulent bivalve, otherwise known as the oyster. Oysters, it seems, are sometimes grown in waters which are subject to contamination, and, as with drinking water, a dose of chlorine properly applied will make them safe. Matthew's organization is investigating this subject in an endeavor to find some commercially practical scheme of purifying these little creatures before they reach the human tummy. Inasmuch as we ourselves are somewhat partial to oysters on the half-shell, raw and cold, we hope friend Matthews finds the answer.

Sweet words, these, from Joseph I. Murray, VII! A little word of sympathy in a desert of indifference does warm our heart. "I still get *The Review*, I read the Notes, I am interested in the Class, and I think you have indeed a thankless job," writes Murray. Just at present Murray is enjoying a rest, after having promoted a milk business somewhere north of Boston and then disposed of it. Although he doesn't say so, we suspect he disposed of it at a profit, because he admits having made a trip to New York recently for no other reason than to visit the Automobile Show "in search of a good car." Personally we fear we may have to visit the secondhand dealers in search of our next car. These confounded milk dealers are charging so much that we'll never be able to have a really new car. Why does milk cost so much, J. I.?

Murray has done a lot of traveling since the days when we used to take mid-year and final exams. He commenced his professional career in New York, then went to Winnipeg. In 1917-18 he joined a large personally-conducted tour to France and Belgium and wound up in Germany. As you might have expected, if you knew J. I. as we did, he was with the 26th Engineers. Having failed to see enough horrors in that period, he went to work for Wilson and Company in Chicago, which job secured for him, he says, a more than intimate acquaintance with pigs' livers, kidneys, and stomachs. In 1927 he made another trip to Europe, this time without Uncle Sam's assistance. At this writing he's looking around Boston for another chance to do something to raise the price of milk. Murray claims a record in one respect. He has seen at one time or another since 1912,

every man who was in his Course at the Institute. His present address is 6 Brookdale Road, Arlington, Mass. He is married and boasts one daughter.

We haven't mentioned that Twenty-Year Reunion so often lately, but we assure you that we haven't forgotten it. And we don't want you to, either. It's only three and a quarter years off, so keep it in mind. — FREDERICK J. SHEPARD, JR., *Secretary*, 125 Walnut Street, Watertown, Mass. DAVID J. McGRATH, *Assistant Secretary*, 411 Maitland Avenue, West Englewood, N. J.

'13 The Under-Secretary was mentally congratulating himself that there were no notes to write for this issue. He assumed that our genial Phil was functioning properly, but the morning mail broke the spell. The following explains why Phil was unable to officiate. Rachel Capen Stevenson (Phil Capen's sister) passed away from influenza on January 10. She leaves her husband and two small boys, besides her brother and parents. She was known to quite a number of our classmates, as well as to members of classes following. Our sympathy goes to Phil and his family in their bereavement.

Harry Burnham has moved to New York. — A. H. Means apparently is back in the States with the American Smelting and Refining Company. We heard that he had to go to O. R. C. camp at Fort Russell this last summer. — John B. Welch is Vice-President and General Manager of the Eastern Division of the new company, the General Dry Kiln Company, recently formed by merging several Portland, Seattle, and New Orleans companies. Welch, with Fred Dierks '12 and DeVere Dierks '15 formed the Welch Dry Kiln Company in 1921. — The *Yale Scientific Magazine* carried two full pages of an article dealing with new types of electric furnaces. Much praise was bestowed upon Arthur E. Bellis and his company for their excellent work in this respect.

We have learned that Charlie Burdick has left Guggenheim Brothers, and Chilean Nitrate to join Lazote, Inc., as director of development. Perhaps Charlie can tell us what Lazote, Inc., means. By the way, the *Engineering and Mining Journal* also says that our classmate did not get enough study at the Institute but resorted to five European universities before he cried, "enough!" Hence the title Herr Doctor Burdick. — I talked with Phil Terry the other day. He has become Secretary of the Blue Print Manufacturers Association.

Remember, Classmates, that Your Secretaries cannot manufacture Class Notes out of the air. If you find no notes in the next issues, blame yourselves. Send in your contribution. How about your 1929 class dues as well? Send them along to Joe MacKinnon, our newly elected Treasurer. — GEORGE P. CAPEN, *Secretary*, 50 Beaumont Street, Canton, Mass. ARTHUR L. TOWNSEND, *Assistant Secretary*, Room 3-435, M. I. T., Cambridge, Mass.

'14 We're off! As the reportorial staff of the *Fourteen Pointer* was not organized completely, it was considered advisable to run in the first edition only the advertising pages. From them a tear sheet was taken and mailed to the Class. The reporters are all on the job now, and are developing into fine tunnel workers. Watch for the next issue; we have taken out scandal insurance!

June 21 to 23 at the Riversea Club, Saybrook, Conn.; that is where Buck Dorrance is to give his first showing of "Whoopee" or "Fifteen Years Adrift." Any Fourteener this side of Australia missing this event will have five years of regrets. The Riversea Club was available for either the first or third week-ends in June. The committee voted eight to four for the third week-end. The January Boston luncheon similarly voted over two to one for the same time. Your Secretary was strong for the later date on the theory that Long Island Sound would be warmer in the event that he should again find himself holding to a submarine periscope. Jimmy Judge of Holyoke was the first to send in an official reservation. We think that Jimmy is trying to square himself with the Class for his Ten-Year Reunion lighthouse serenade. A questionnaire was sent out early in January. This gave much material for Class Notes, but as most of the material will appear in the *Fourteen Pointer* we will not repeat it here.

The January Boston luncheon was held on the eighth. We welcomed back to our fold Porter Adams, who for two years has been in Washington. Porter gave a talk on the recent celebration at Kittyhawk in honor of the Wright brothers. Wyld, Horton, Crocker, H. S. Wilkins, Atwood, Trufant, Fales, Adams, and Richmond were present at the luncheon. — Seymour Spitz has moved east to New York City from South Milwaukee, Wis. Spitz is Vice-President of The Newport Company, which company recently acquired the General Naval Stores Company of New York which accounts for his coming to New York. In addition to these two companies we find Spitz a director of the Newport Chemical Works, the Newport Turpentine and Rosin Company, and the Armstrong-Newport Company.

The questionnaire brought out several bits of vital statistics not previously reported in these columns. These appear largely as junior members of the Class. For example, E. I. Staples has never written us a word, and now we find him boasting of three husky sons. Deac Barns had previously failed to report the arrival of a son on May 21, 1926. Although we have heard from Homer Calver several times he carelessly failed to report two daughters, aged six and three. P. F. Benedict welcomed a son on April 15, 1927, to join a brother and a sister. Harold Fay reports a four-year-old daughter. — More next month! — H. B. RICHMOND, *Secretary*, 100 Gray Street, Arlington, Mass. G. K. PERLEY, *Assistant Secretary*, 21 Vista Way, Port Washington, Long Island, N. Y.

'15 Our Class has been dealt a sorrowful blow. In the death of Howard C. Thomas, on December 10, we lost one of our best liked and most popular men in the Class. As you all will remember, Howard had been in poor health for the past few years. For a time he was in southern New Hampshire, and last fall he was down in the mountains of North Carolina, whence Mrs. Thomas went to bring him home to Newton Highlands, Mass., where Howard passed away the day after their return. Some of the boys in Boston attended his funeral and arranged for flowers from the Class. Mrs. Thomas has written us: "I should like to extend to the Class of 1915 my deep gratitude for the exceedingly beautiful flowers sent at the time of Howard's death, and also for the many, many kindnesses which have been bestowed upon Virginia and myself. To know that Howard's feelings of love and loyalty to his classmates were so heartily reciprocated will always be one of my greatest comforts."

Not enough can be said for Howard's likeable personality and class loyalty. What a splendid fellow he was! In his undergraduate days he was popular in Course I, especially during summer camp. After graduation he worked as a construction engineer with Lockwood, Greene Company until his health failed. He was Class Treasurer and Assistant Class Secretary for a long time and was actively interested in class affairs. We could always count on Howard's support for any class doings, and his enthusiastic work helped to make our Tenth Reunion such an enjoyable success. At the suggestion of some of our men we are having prepared for presentation to Mrs. Thomas a memorial engrossed on vellum, bound in a soft leather fold, with an appropriate touch of cardinal and gray the following text: "The removal of our classmate, Howard Cushing Thomas on December tenth, nineteen hundred and twenty-eight, from his cheerful and useful activities, brings to the members of the Class of 1915, Massachusetts Institute of Technology, the deepest and sincerest sorrow. We take pride in recalling his enthusiastic and loyal devotion and service to our Class."

"We tender to Howard's family our sincere sympathy for them in their loss and grief and express the hope that they will find comfort, as we do, in the recollection of his honorable career."

It seems only fitting that we omit all other class news this month and leave this issue as a memorial in these records to Howard's memory — AZEL W. MACK, Secretary, 377 Marlboro Street, Boston, Mass.

'16 The members of our Class were probably surprised to learn from the February Review that Rusty White has resigned as Secretary of the Class. I don't know why they picked on me, but the members of the Executive Committee appointed me as Rusty's successor, so here goes. Copy for this issue was due in a short time

after my appointment. However, I believe that the following items will be found of interest.

Here is Bill, Farthing's acceptance of Rusty's resignation: "You old devil, I was glad to hear from you, even if it took a matter of state to get a line out of you. I regret that your work has made it necessary for you to give up the class secretaryship, and I am sure that this will be the sentiment of all the members of the Class. I reluctantly accept your resignation, and only provided you promise to assist Shep and Chuck in every possible way in getting items of interest for The Review and in the general reorganization of the Class; also that you will complete your present undertaking in time to help us with the next reunion, for without your able assistance the last one would have been a flop, and certainly none present at that one could consider it other than the most successful ever held. Hovey has told me something of your invention, and knowing you as I do, I can understand that you have been too busy to bother with such small business as Class Secretary. You have all my good wishes for success in this undertaking and all others during the coming year."

We are all sorry that Rusty is no longer with us as Secretary. However, the following letter from Hovey Freeman explains why Rusty has not had time to attend to such trivial matters as Class Notes: "Rusty has turned inventor, and has been so busy that he hasn't had time to take a drink for the past two years. He has even given up smoking, but is looking the best I have seen him for years. He is working at the Institute with Professors L. F. Woodruff and Edward Rogal, both of the Class of '18, on a very complicated central records machine for installation in large department stores. It certainly is a most interesting and fascinating proposition but highly complicated. He states that they are now making an installation in the Kauffman Store in Pittsburgh and that one of the biggest department stores in Boston has told him that his system would save them \$1,000,000 a year in clerical hire. The installation cost, however, for them is \$750,000, which they are not apparently quite ready to make. Rusty feels quite confident that by the time he is forty he will be quite a wealthy man due to royalties that he and the others will get from the different installations."

"Roughly speaking, his scheme is to use a Hollerith or Powers punch card. One card gives the price data, and is attached to the article to be sold in duplicate, and the other consists of the buyer's card or key which department stores furnish to their customers. The clerk making the sale has an electrically operated tabulating machine on his counter. Both cards are put into the machine at one time and the information thereon is transmitted electrically to the central records machine in the central office where everything is printed automatically, even to the investigation of credits. Unless one is familiar with accounting it

all sounds complicated, but he has certainly worked in some very novel features, for in case the first recording machine in the recording room is busy there is an automatic selector which automatically turns the information over on to the machine next to it which is not in use. Rusty is certainly all enthused about it. Actually what Rusty does is to carry one step further the accounting practice which I have here in my own office which I adopted about five years ago, for he gets the purchaser to make the records himself, where, of course, I cannot do that."

"Regarding Class Notes, the only people I have happened to see lately are the local crowd consisting of Saul Makepeace, Ed Parsons, the Stewart twins, and L. E. Knowlton. We had a meeting of the Technology Club of Rhode Island at the T. K. Club in Pawtucket, and, incidentally, this has gotten to be an annual affair and one which you ought to attend some year, for I guarantee you will have a good time even if it is a rather wild party from start to finish. At the dinner the six of us of '16 sat together and any time any other Class started something we proceeded to drown them out in more ways than one, and I believe we did. In fact, we should have won the bowling tournament had we had a proper score keeper, but unfortunately the man keeping score for us was sober which was a bad mistake on our part."

"My brother Jack was home for a week at Christmas time with his family consisting of a little girl, two years old, and a young son, John R. Freeman, 3d, who is now five months old and already registered at Technology. Jack is doing some very interesting work for the government at the Bureau of Standards on the failure of steel rails and has had a lot of interesting experiences recently with various railroad officials making tests out on the main tracks by various new ultrahighbrow processes. In fact, it is difficult for a poor Course II man to understand his \$4.50 words. As for myself, there is no change since I saw you last summer. I have four fine youngsters and my chief interests are insurance and banking. When I took over the job of Class Treasurer I was not given any of the former records and so do not know where they are, nor do I know who has paid class dues in the twelve years which have passed since graduation. You might put a paragraph in your Class Notes that I am going to send out a bill for class dues at \$3.00 per year for the twelve years and ask every one to let his conscience be his guide and pay up what he owes."

Here's a letter from Tom Berrigan: "Just a line to let you know what this young fellow is doing so that you will be able to straighten out the records. I am not doing anything important enough to occupy very much space so let's just say 'Tom Berrigan is a senior engineer with the Boston Transit Commission and he's been studying law for three years at Northeastern University.' I ran into Dan Comisky and his wife in Filene's yesterday and enjoyed their company at dinner. Dan had returned from El Paso

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and is associated with his brother in the milk business at Dover, Mass. Jack Hickey is in the meat business on North Street, Boston. Jack enjoys a delightful home in Belmont with a charming wife and three children."

An erstwhile General Manager of *The Tech*, Santy Claussen, can always be relied upon for copy. "As you know, my status has not changed in recent years. With Chuck Loomis, Tom Little, and Dick Hunneman, I make the fourth in the quartet of '16 men with the Bemis Brothers Bag Company. Some day you might call on the four of us for a joint article in *The Review*. But for the present I don't feel like saying any more about myself. I want to take this opportunity to appeal to the Class to get behind its new Secretary and give him material to work with. Don't wait for an appeal for news. If '16 men haven't anything interesting to say about themselves, send in some kicks, tell us what a bunch of dead ones we are, but at least say something."

Dick Rowlett sends in the following interesting notes: "There's really not much dope I can give you. Kittredge is with the Walsh Construction Company which does most of the New York Central Railroad construction work. He was assistant superintendent on the Castleton Cut-Off job, I believe. Now he is one of the big boys on the Union Station job in Cleveland. He is married and the proud father of a peach of a daughter. He is the same old Kittredge, a little bald on top, but likes his good time as much or more than ever. Dinah Coleman is a big coal and clay man in Kentucky. He owns and operates some coal property on which they discovered some sort of clay which is unusually desirable for use in firebrick. I understand he has developed machinery for working this stuff which will give him the edge on all the other companies in the country and should enable him to spend his old age saturated with filthy lucre. As for me, I am not president of anything. I am still working for a living trying to keep body and soul together and buy shoes for a son three and one-half years old and a daughter one and one-half years old, to say nothing of the wife and self. As you know, I threw in my lot with the Sesamee Company in Hartford and am busy trying to convince the world that the Sesamee Keyless Lock is the ideal lock now and eventual one of tomorrow. We seem to be proving it, too. Sorry I can't give you any more dope, but will accept the job as reporter at large, on my own initiative."

Dave Patton is getting to be a high financier. He states: "I am sorry that I have not much of news for front page copy, old or new. For the least important item, — I am gaining a cursory knowledge of the inside workings of high finance after six years with Harris, Forbes and Company. Ninety-four years more to go to become a leading banker. Aside from the retail distribution of securities which is the end of investment banking which provides the means, as well as being the means to an end, the work preliminary to the floating of large

bond issues provides an interesting and broad field for the engineer, particularly the Technology man who has a leaning toward finance fostered by Course XV. [Secretary's note: All statements made above, while not guaranteed, are believed by us to be accurate!] I received a letter from Steve Brophy, now a month or more old, in which he holds forth optimism for the copper industry. He should know. Anaconda has dealt generously with the stock buyer of late, and its convertible bonds have been a bonanza."

Chuck Loomis, even though he scraped the bottom of the pan for news for last month's Review, contributes the following: "Tred Hine has been elected President of the Detroit Technology Club. The retiring president is also a '16 man, Phil Baker, who has held the office for two years. Phil Baker is Vice-President of the J. Lee Baker Company, one of the leading real estate firms in the city and Tred Hine is with Smith, Hinchman and Grills, perhaps the outstanding architectural firm of Detroit. At any rate, they seem to do most of the big work. Tred has been in charge of several of their important jobs. I had a Christmas card from O. B. Pyle from Baltimore. I know nothing as to what he is doing."

Jeff Gfroerer is now with the Dodge Motor Car Company and is located in the Indianapolis office, 824 Illinois Building. The following letter would indicate that he was not altogether pleased at observing his name in the recent '15 class notes. We won't let it happen again. "You will note from the Class Notes of '15 that Tom Ryan and myself are included in their Class. Of course, there is no excuse for Tom because they have a competent Class Secretary, and usually have some good Class Notes. In my case, I find the only way I can burst into print is to get together with Azel Mack, which I manage to do now and then. A few weeks ago I had an announcement of the wedding of Harold Russell. Evidently Harold is finding the boiler business profitable. I believe I wired him my congratulations and sympathy to his girl, but I haven't heard from him since."

Irving McDaniel, in sending his check for dues to the Alumni Association, wrote them that he had delayed sending his check due to the lack of '16 Class Notes. He states further that he is seriously considering defaulting next year, unless there is a change for the better. Come on, Mac, don't get discouraged.

The following clipping is most interesting. It is taken from the *National Petroleum News* of December 26: "Robert E. Wilson, a director of research for the Standard of Indiana and one of the most widely known petroleum technologists in the country, has been promoted to a new position with the double title of assistant to the vice-president in charge of manufacturing, Beaumont Parks, and head of a newly created development, patent and trademark department of the Standard of Indiana. He was graduated from the College of Wooster, Ohio, and took two years postgraduate work in chemical engineering at the M. I. T.

During the war he was captain and then major in the chemical warfare service, directing defense chemical research. Later he was appointed director of the research laboratory and associate professor of chemical engineering at the M. I. T., which positions he held until October, 1922, when he associated himself with the Standard of Indiana. He has published a considerable number of papers on lubrication, corrosion, volatility of gasoline, and others dealing with the various physical properties of hydrocarbons. He is the developer of Iso-Vis, the prediluted motor oil put out by the Standard of Indiana, and was the expert witness for the defense in the suit brought against the Patent Club by the United States government. The special master found in favor of the Patent Club. Mr. Wilson also is the inventor of the balloon as a means of reducing evaporation loss."

E. Blythe Stason, VI, is now Professor of Law at the University of Michigan. In a recent article in *The Michigan Alumnus* he describes a new development in practice of legal argument. This is the organization by the law students in the school of so-called "Case Club," for the purpose of self-improvement in the art of preparing and presenting legal arguments.

Genial Steve Brophy writes as follows: "In compliance with the request contained in your letter of January 13 asking for information about myself, I can only say that I am still with the Anaconda Copper Mining Company in charge of sales research and promotion for that company and its various affiliated and subsidiary organizations, including The American Brass Company and the Anaconda Copperclad Company, in which Gene Lucas and Bill Shakespeare are important factors respectively. I am also Vice-President and a Director of the Anaconda Copperclad Company, Anaconda Sales Company, and the International Copperclad Company and have recently been elected Vice-President and member of the Executive Committee of the Copper and Brass Research Association, so you can see that all of my business activities have a strong copper and brass flavor. As for the family statistics, I have two children — a boy four and a half, and a little girl two and a half. We live in Scarsdale, which is located in Westchester County about eighteen miles from Grand Central, and we are always delighted to see tourists of the vintage of '16 who may be passing through our village."

"Gene Lucas is located with the American Brass Company at Waterbury, Conn. He is now engaged in writing a book on the transmission of power by means of copper wire and cables. This book when completed will probably be the most complete work on this subject which has been made. Bill Shakespeare is manager of the Anaconda Copperclad Company, and operates the largest electroplating plant in the world, located in Rutherford, N. J. In this plant Bill deposits copper onto roofing materials hav-

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ing an asphaltic base, thereby producing what is generally conceded to be the finest roofing material extant. Bill hasn't changed a bit in the past twelve years. I mean this literally. He looks and acts exactly as he did when we were all together in Boston. His home is in South Orange, and when he isn't trying to coax the little atoms of copper to deposit more readily upon the asphaltic base of the roofing, he is playing with two young Shakespeares who are boys, aged nine and a half and seven and a half respectively. Within the last two years Bill has acquired a farm of several hundred acres, located in the northwestern part of New Jersey, and now supplies himself and family with vegetables personally coaxed from the soil from May to November. The family retreat to the farm every Saturday and spend the week-end haying or otherwise occupying themselves with pursuits of the soil."

It is sincerely hoped that the members of the Class who have read the preceding notes have found them interesting enough to cause them to make the solemn vow to sit down at once and send your humble Secretary information, not only about themselves, but about other of our classmates. — HENRY B. SHEPARD, *Secretary*, 269 Highland Street, West Newton, Mass. CHARLES W. LOOMIS, *Assistant Secretary*, 7338 Woodward Avenue, Detroit, Mich.

'17 A last year's clipping has turned up from an old coat pocket or some other equally effective filing device, but we have had so little news about A. R. Brooks that you may be glad to hear now that last spring he was serving as the Bell Laboratories pilot in aerial communication research, flying a Fairchild plane. The same file has the following to report on D. W. Wilson: "H. D. Savage, President of the Dry Quenching Equipment Corporation, a subsidiary of the International Combustion Engineering Corporation, announces the election of D. W. Wilson as Vice-President and General Manager. Mr. Wilson has been intimately associated with the coke oven and gas industries for many years. He has been active in the work of the Carbonization Committee of the American Gas Association and has contributed various technical papers and articles relating to the subject of this committee's work. His previous identifications have been with the Wilputte Coke Oven Corporation and the Iroquois Gas Corporation. He was also Assistant Professor of Chemical Engineering at the Institute."

Joe Gargan has reorganized his shoe company, and it is now the Warren Shoe Company of Peabody, Mass. — McNeil has left the 99 44/100 per cent pure organization and has joined the Colgate-Palmolive group. With Proctor and Gamble he was serving in the capacity of a comptroller; presumably he is doing similar work in his new connection. — Stan Cooper is reported to have joined Johns-Manville; our New York reporter, Stan Dunning, can perhaps furnish addi-

tional details. He telephoned when he was in Boston, but, unfortunately, he had already made his luncheon plans. He is still sales manager of the Muralo Company, makers of water paints and wall coverings. He did say that Dad Wenzel is back from four months in Europe where much of his time was spent in Spain and France. You will recall that Dad is with Harris, Forbes and Company and can pretend such things have some connection with business. Schoonmaker made no bones about it — he went to Europe for the refreshment there was in it and returned without enough cash to come to Boston from New York.

Dr. Clair E. Turner is now devoting an appreciable portion of his time to writing moving picture scenarios; he has a full time assistant on this work, and fifteen or twenty of his productions will be released to the public schools next fall. Did you see his article in the February Review? From the *Morgue* we take the following as the Boston *Evening Transcript* originally told it: "Plans for a complete series of health education films designed specifically for class room use in public schools have been completed under an agreement by which the Department of Biology and Public Health of the M. I. T. will cooperate with the Eastman Teaching Films, Inc., in what is said to be the most comprehensive program of its kind ever undertaken. The films will be produced under the direction of Dr. Clair E. Turner, Professor of Biology and Public Health at Technology, and one of the leading authorities on child health education. The program will include films showing the nature and functions of the body and problems in health control of the environment, all presented with the greatest scientific accuracy and so produced as to interest the child. Special equipment for microscopic motion picture photography is installed at Technology. The new work will proceed hand in hand with further developments in the bio-cinema research laboratory, established in 1921 for motion picture research and for the production of educational films dealing with the nature of bacteria, the disposal of sewage, the diphtheria organism, the preparation of antitoxin, and other subjects. The class room films produced at Technology on biological and public health subjects were the first contributions of the kind to be made at an American educational institution."

Harold E. Ayer writes from Portland that he has been ill for the past six weeks and looks forward to another six weeks to be spent in the same way. Apparently his main regret is that his illness will keep him away from the annual Alumni Dinner. — RAYMOND S. STEVENS, *Secretary*, 30 Charles River Road, Cambridge, Mass.

'18 What is this I hear? Has the Class of '16 lost its former Secretary, Russell White? What happened to Rusty? Rumor has it that '17 is to have a guest column for '16 news. Just a word to '17; if that news

gets too heavy and you cannot take care of it all, '18 will be glad to assist in the editing of that section. Just let us hear from you.

The Boston crowd have started holding the luncheons again the third Monday of each month at 12:30 at the Engineers Club. Any '18 person in or around Boston at that time each month should drop around to the Club; he will find someone there. Our first session was held on January 21, and I must confess there were only five present. With all the sickness there is around and business obligations to be met, that wasn't so bad for a starter. Let us just hope that each month the number will increase until we have a full dining room each month. Those present this time were John Clarkson, Lovey Collins, Fred Washburn, Eli Berman, and the Secretary.

I was hoping to have news from New York to give you this month, but nothing has arrived in Boston from that group. I did have a call from Alan Sanger for a few minutes. Alan was in Boston on business and was returning that evening to New York. The last of January he plans to leave for a business trip to the Pacific Coast. Good luck to you, Alan.

One letter arrived from a classmate this month. One person at least noticed that there were still a few copies of *The Eighteenth Amendment* to be had. From Thomas V. Brosnahan at 369 Lexington Avenue, New York, comes the following: "Referring to the '18 Notes in the December issue of *The Review*, you state that you may be able to secure a copy of *The Eighteenth Amendment* for anyone who is interested. If this statement still holds, please send me a copy and advise me of the price." You see he wants it and asks me to advise him of the price, but that doesn't say he will pay it. We think he will though, especially after he sees the book. "For the past four years I have been with the S. S. Kresge Company in various stores located in Massachusetts, New Jersey, Pennsylvania, and New York State. I am now at the Eastern District office of the company in New York City." He then goes on to state that he has tried to get in touch with one or two of the '18 boys whose names he found in the New York telephone directory only to be told that the fellows have moved. There are plenty of fellows around New York, Tom, but most of them live out in the suburbs. Call the Telephone Company at 195 Broadway and ask for Mal Eales. Let him know that you are around and in that way you can get in touch with the '18 doings down there. He goes on to tell about his vacations for the past two years. In 1927 he went to Bermuda and in 1928 to Cuba. He says the latter was more lively and spicy than the former. We wonder why. From his description I should say it was because of the lack of automobile traffic in Bermuda where autos are not allowed. He closes by saying, "If you ever contemplate an ideal rest for a tired body and weary nerves, take a trip down through the Gulf Stream." That would be mighty fine if we had the time and the money at the

same time. Perhaps some of the Class may succeed in doing it. Let's hope so.

So much for this time. Just let us know the news, and remember that it is the third Monday of each month at the Engineers Club for the '18 luncheon. — GRETCHEN A. PALMER, *Secretary*, 148 State Street, Boston, Mass.

'19 The most important news item for this issue is an announcement of the Ten-Year Reunion to be held next June. For some time a committee, composed of the following men, has been at work on reunion arrangements: Paul Sheeline, Chairman, Fred Barney, Bob Bolan, Ev Doten, Charles Drew, Bob Hackett, Art Kenison, Bill Langille, Howard McClintic, Oscar Mayer, and Jack Stevens. It has been officially announced by the committee that the Reunion will be held at the Corinthian Yacht Club at Marblehead Neck, Mass., on Friday, Saturday, and Sunday, June 7, 8, and 9. Much credit is due the committee for having secured the exclusive use of such a beautiful spot for the week-end. The committee has also announced that the Reunion is to be a stag affair. Oscar Mayer, who is handling the publicity work for the reunion committee, will give you further details in a short time. Meantime, note the dates and make your plans to attend.

You will be glad to hear from Arnold Staubach who is now located in Comfort, Texas, with the State Highway Department. We quote from his letter: "I have intended to send a few lines to The Review so that my erstwhile friends would know where and why I'm buried. I came to Texas from Michigan in February via New Orleans and Mardi Gras for health and I have stayed to help the State Highway Department. We have been on location work every since, being situated at Austin and New Braunfels in connection with U. S. No. 81 from Austin and San Antonio, and now on work northwest of San Antonio in the Hill Country. While, on the whole, I am very well, I have not traveled about more than work calls for. I am in Austin and San Antonio a good deal, but there are very few Technology men in either place and none from '19 that I know or know of."

Roy Mackay sends a most interesting letter from Sparrows Point, Md. He is working in the Rod and Wire Mill of the Bethlehem Steel Company in that city. We cannot do better than quote: "Well, Bill, I guess you want to know what I have been doing since 1918, so here is a brief summary: One year, Georgia School of Technology, instructor of physics; one year, engineering office, New York City; one year, field engineer, Kansas and Texas oil fields; one year, experimental work, Davison Chemical Company, Baltimore; one year, electrical department, Bethlehem Steel Company; five years, metallurgical department, Bethlehem Steel Company, Sparrows Point, Md. For the past three years I have been directly connected with the Rod and Wire Mill, both in the mill and on the road. This work has been very

interesting and not at all monotonous; something new to learn all the time. I was married in Galveston, Texas, in 1920 — no little Macs, just cats. I liked the Southwest and may go back into that section again some day.

"On one of my summer hoboing trips (1924), I passed through Newport News, Va., and saw Lloyd Sorenson. He is an inspector with the Newport News Shipbuilding Company, has been there ever since 1918. He is also married and at that time had no children. My feet will get 'itchy' and I have to hit the road every so often. I traveled all through the East and South over the road — that's the only way to see the country right. Who would ever think Technology would turn out a hobo? I certainly have had lots of fun, seen many a strange sight, and had many a queer experience. However, I have always managed to stay out of the jails, so far. I guess I ought to be entitled to a degree in some kind of 'hobo-ology' by this time. My ambition now is to tramp down through the West Indies, Mexico, and South America. Guess I'll have to wait a while, however."

George Michelson called in to see us a while back. He was spending a few days in New York prior to a pleasure trip to the Pacific Coast. George is still single and says he spends most of his time in his business, the Construction Supply Company of Boston. We hope to tell you later about his western trip.

We recently had a letter from Fred Hewes, who has just returned from Pearl Harbor, Territory of Hawaii. His letter is of particular interest as it tells of other '19 men with whom he has come in contact. "Please pardon the delay in replying to your note of December 4, but we just arrived here in San Diego after three and one-half years' duty at Pearl Harbor, T. H., and the spare hours have been occupied with the old routine of getting settled. Ed Pickop lives in Honolulu and is on the engineering staff of the Superintendent of Public Works of the Territory of Hawaii. He has had varied and interesting projects, in charge of waterfront improvements in Honolulu and outlying harbors in the Islands, and recently completed the construction of a large outdoor natatorium at Waikiki. He is married and has a daughter and son. Henry Wilson is on duty here at San Diego in charge of public works projects at the Naval Hospital. I have similar duties at the Naval Air Station. We both entered the service in 1921. Mrs. Hewes and I have decidedly favorable first impressions of San Diego and believe that we shall enjoy the next three years' duty here."

And here is one from Joseph Newell, which required no comments. Newell is now at the Institute as an Assistant Professor. "You requested some information about my activities since leaving the Institute, so here goes in tabloid form: Graduated in September, 1918, as of 1919. March 11, 1919, arrived in Buenos Aires for a short stay. June, 1919, became a draftsman at Frigorifico Armour de La Plata, Buenos Aires. April, 1920, arrived in God's Country to become an assistant

in the Department of Civil Engineering at Technology. (Was warned of panic to occur in the States during 1920.) October, 1921, decided panic was all over, prospects of continuing life as an assistant were none too alluring so tried highway work with the State of Illinois. Not 'Gutter and Yegg' work around Chicago, but chasing right of way lines down in 'Egypt.' — Carbondale, to be exact. Couldn't stand Carbondale any more, so when they took the ten per cent tax off rail transportation at 12 P.M. on December 13, 1921, I left for Dayton at 5.30 A.M. on January 1, 1922. Started work in Structures Unit, McCook Field, Dayton, and pursued stresses in airplanes for about five years. Helped evolve some of the rules for design which now worry military and commercial manufacturers and was chiefly responsible for the 'precise method' used for the determination of stresses in beams subjected to combined bending and compression. Was elected to Sigma Xi at Ohio State on the strength of that and a couple of other minor jobs. Was Assistant Unit Chief when I left McCook Field.

"January, 1927, left the Field to come to Technology as an instructor. June to September, 1927, had the duties of Chief of the Engineering Section of the Air Regulations Division of the Department of Commerce and while there wrote the present act of requirements — except for a few revisions — for the approval and licensing of airplanes, in so far as they apply to airworthiness. September, 1927, returned to Technology as an instructor in Structures. June to September, 1928, spent a hot summer in Washington chasing stresses for the Department of Commerce and revising their requirements in the light of a year's administration. September, 1928, returned to the Institute as Assistant Professor of Structural Engineering and am still there. Am retained as consulting aeronautical engineer by the Department of Commerce and am just completing the editing of the changes in requirements suggested last summer. Marital status, one wife, two sons and a daughter (all white)."

Let us have more letters like these. — WILFRED O. LANGILLE, *Secretary*, 144 Acme Street, Elizabeth, N. J.

'20 Your Secretary is happy to announce two weddings of note. On December 22 Miss Eleanor Dyche Weakley became Mrs. John Nolen, Jr. Congratulations, Jack, and many of them! The wedding took place at Ardmore, Penna. At present I am not informed as to where the Nolens will make their home. Let's hear from you, Jack. — Fritz Boley followed close on Jack's heels with December 25 as his wedding date. Miss Frances Beadel became his bride at New Castle, Penna., and I have the news that the Boleys will be at home to classmates and other friends at the following thrilling address: "La Monona," San Isidro, Buenos Aires, Argentine Republic, S. A. If you don't happen to be in this vicinity when you read these notes you can at least drop

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Fritz a line to strengthen the warmth and sincerity of the congratulations of the Class.

Speaking of Latin America, I received a charming and quaint Christmas greeting from Mr. and Mrs. A. A. Brown and Mary Jo containing a sketch of one of the old Spanish mission chapels, no doubt located in Parral, Chihuahua, Mexico, where Skeets and his family reside. I hope you will write us some news soon, Skeets. I was also glad to receive a card from the Harold B. Caldwells. We'll be mighty glad to get some real news of you, Hank, if you can find time to drop us a line.

Our notes this month appear to have a distinctly foreign flavor. I clipped from the Boston *Herald* last Sunday a splendid picture of good old Bunt Murphy accompanying the headline, "Lawrence Man Cited for Work in Near East." The newspaper story is worth quoting verbatim. "Henry R. Murphy, son of Dr. Thomas W. Murphy, has been commended in the annual report of the Near East Relief for his work among the children outplacred from the American orphanages in Syria. Mr. Murphy, who is a graduate of the M. I. T., is the winner of the Cleveland H. Dodge distinguished service medal, presented for his part in the transportation of 23,000 children from the interior of Turkey to places of safety during the deportations of 1922 and 1923.

"In his care at present in Syria are 4,000 boys and girls, for whom, with his native staff of 21, he provides medical care and development. Nearly 700 of the boys and girls in his charge at Aleppo are enrolled as members of the Near East League, a post-orphanage organization, and meet nightly for study and social activities." Truly, Bunt is one boy whom we as a Class can be proud to count among our number. One of the most modest and unassuming individuals and offering as his excuse that he likes the country and his work keeps him out of mischief, he is dedicating his life to a really remarkable service wrought under untold difficulties. We take our hats off to you, Bunt.

I have a good, newsy letter from Bill Dewey. Bill says, "Since you last heard from me I have a little news which may be of interest to some of the old crowd. First of all, I am the proud father of a son, Robert Greer Dewey, born December 9. On November 1, I resigned my position as manager of manufacturing for the National Cellulose Corporation at Baldwinsville, N. Y., where I had been located for a year and a half. On November 15, I started in my new position as superintendent of the Rising Paper Company in Housatonic, Mass. This is a new corporation owned and operated by the Strathmore Paper Company which purchased the B. D. Rising Paper Company in which plant I was assistant superintendent for seven years previous to going to Baldwinsville. Up to April 15 we are living in Great Barrington, and after that date we will be in Risingdale, a small community adjacent to the mill, and if any of the '20 friends are in the Berkshires,

the latchstring is out and they will find a welcome on our doorstep." Here's wishing you all success, Bill.

Mr. and Mrs. Buck Clark will reside in Hartford and not in Springfield as previously announced in these notes. They may be found at 241 Grandview Terrace. — HAROLD BUGBEE, *Secretary*, 9 Chandler Road, West Medford, Mass.

'21 For once we are not going to run a long, drawn-out appeal although live news continues to be inversely proportional to the tenth power of something or other. In these days of industrial mergers, perhaps Harold and Eric, on either side of us, might agree to a '20-'21-'22 combine retaining the best features of each. Maybe the new administration in Washington will bring an era of class note prosperity.

D. O. Woodbury, VI-A, has an article on "Technical Journalism" in the January issue of the *Tech Engineering News*, but he says nary a word about writing for Class Secretaries. To quote the T. E. N., "We feel that Mr. Woodbury is particularly well qualified to write on the subject of 'Technical Journalism' as he is at present engaged in that calling. After some time in the publicity department of the General Electric Company, he is now News Editor of *Power* (McGraw-Hill Publishing Company), a well known technical journal." — M. S. Vallarta, XIV, paused long enough in his professorial duties to write a lengthy comment for *The Tech* comparing the educational policies and problems of European institutions of learning with those which American schools must face at the present. — J. W. Scott, Jr., I, has been elected Vice-President of the Technology Club of Rochester at an annual meeting of the Club at which E. L. Oliver, I, had the high score in a rifle match which formed part of the sports program. — L. W. Bugbee, Jr., XV, is Secretary of the Indiana Association of the M. I. T. — RAYMOND A. ST. LAURENT, *Secretary*, 225 Cleveland Avenue, Whiting, Ind. CAROLE A. CLARKE, *Assistant Secretary*, Research Department, Victor Talking Machine Company, Camden, N. J.

'23 The '23 Notes have been rather scarce in The Review columns so far this year. However, we have ducked under the wire this month with a modest offering and would like to make a request for more news. Don't wait, just send in a line about yourself and any other '23 man that you happen to know about.

The Gensec received the following very interesting and welcome letter from Herb Ludeke: "The lack of Class of '23 Notes in The Review is so disappointing to me that I am moved to make my debut as a contributor. My first job was with the Tyer Rubber Company in Andover, Mass. This was a sales job and I went through it in the approved fashion — factory, office, and finally the road. This was topped off with a year and a half as sales manager for the company. The lure

of sales research brought me to Pittsfield, Mass., and the Eaton, Crane and Pike Company, makers of Crane's stationery and Eaton's Highland Linen. Here I have been since last April and am enjoying my work immensely. In the past few years I have occasionally seen Harold Flanagan, who, when I last saw him, was in charge of purchases for the plaster division of the Certain-teed Products Corporation with his office in St. Louis. At that time he was still single but wavering. Gus Scholtz, after a period with the Henry L. Doherty Company, joined his father in the import and export business in New York City. Gus is married and is the proud father of a boy now about six months old. Ed Beatty, Jr., II, spent some time with the Tyer Rubber Company in Andover, as also did Bill Gray, and is now in the marketing division of the Blackman Company, New York City, advertising agents. According to Ed, they handle only the best accounts — well anyway, they have Ivory Soap, Mobiloil, Lehigh Cement, and so on. Ed is married and living in Jackson Heights."

In the past we have received a number of news contributions from Professor Locke, and we are certainly grateful to him for sending along the information he receives regarding the Alumni. He sends the following this month: "Norman Weiss, who is with the American Smelting and Refining Company at Santa Barbara, Chihuahua, Mexico, as ore dressing expert, was advanced in September to the position of assistant mills superintendent. In addition to his regular duties he has charge of the Tecolotes Mess Club and has succeeded in changing a deficit of the past into a present surplus. He has forty boarders now and finds it no easy matter to keep them all satisfied and keep a good cook or two at the same time. In November he was elected to the office of President of the Tecolotes Social Club, which is no pastime either, and, thinking that he still had a little spare time, they made him house manager of the club buildings and librarian of the book club. When he has nothing else to do he takes an educational correspondence course or two in advanced mathematics and philosophy. Fortunately he is not married, as his wife would apparently see very little of him."

We understand that Harold Lockhart, who was with the Fall River Gas Works as chief chemist, has been transferred to the Lowell Gas Light Company as industrial engineer. Si Rice has definitely forsaken the ranks of the engineers and is now instructor in the University of Illinois in the Department of Psychology. Rice made his break over a year ago when he left Stone and Webster and entered Harvard as a graduate student in psychology. His new profession seems to be much to his liking. We met George Rowen on Milk Street the other day and was surprised to learn that he had been in Boston for over a year. We made a date for lunch and then were very agreeably surprised when Lyman Tremaine happened to drop into town just in time to join us. George is still with the Sullivan

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Machinery Company and is now attached to the Boston office. He is also still single as is Tremaine. Lyman, however, makes frequent trips from New York to Lynn which he says are partly business. We learned from Lyman that new officers had been elected for 1929 by the '23 group in New York. Rodney Goetchius is now President, Johnny Sands, Vice-President, Waldo Fox is Treasurer, and Walt Marder still holds the job of Secretary. Several meetings have been held since fall.

A pamphlet recently received from The Review Office on "Fluctuating Statistical Standards for Gas Utilities," proved to be a set of statistics issued by Paul Ryan, who is chief statistician for the American Gas Association, Inc. Paul has been with this association for some time and seems to be making good progress. — We ran across Joe Nowell's name in the Boston Society of Civil Engineers Bulletin. Joe is in Boston now and is still with Stone and Webster. — We will close in order to insert welcome notes from Al Pyle. — ROBERT E. HENDRIE, *Secretary*, 12 Newton Street, Cambridge, Mass. HORATIO L. BOND, *Assistant Secretary*, 37 Concord Avenue, Cambridge, Mass.

COURSE VI

It is interesting to see how the germ of industry inculcated at Technology develops into protracted fevers. We find Bill Hahn in his office in Chicago too busy to go home, so his wife has joined him. She writes: "Bill is terribly busy, working hard now, and I'm keeping him company. You know he is still with the 'Generous' Electric Company as transmission line expert in the engineering department. We heard from Mr. and Mrs. John S. Keenan of Toronto, Canada. Johnny is with the International General Electric there. He married a girl from Colton, N. Y. You know Bill has another motorcycle and sidecar. We drive to Schenectady for a couple of weeks each year. Once, on a trip to Pittsfield, the generator failed, and we had plenty of exercise before we arrived. While Bill was out at Duluth, Minn., some time ago, he met Dick Robin. Dick is happily married and has a young daughter. Mr. and Mrs. Joseph Cox stopped over to see us last summer. They live in Pittsburgh where Mr. Cox is with the Westinghouse Company. They have a lovely little girl. We hope to get back to Schenectady as we don't find Chicago an ideal place to live in. Just at present we are at 942 East 81st Street, Chicago. Drop in to see us any time you are out this way." — A. J. PYLE, *Secretary*, 337 West 88th Street, New York, N. Y.

24 Let's report on the Reunion first, and let's report like this: up to January 24, forty-four have told us they planned to be there and twenty-nine hoped to be there, making our total prospect list seventy-three. This is in reply to our first letter. Now there are a lot who haven't replied. We feel that many more than seventy-three are laying plans for the Reunion. If you are one of those will you please drop a

line to your General Secretary (enclosing the \$2.00 registration fee if possible). We are going to lay pretty elaborate plans. Of course we want to know how many will be there. Bill Robinson, having appointed a New York committee and a Boston committee, is now considering the appointment of a special Washington committee. It's sole purpose will be to approach the special session of Congress to procure special legislation favorable to the Reunion. I believe he has in mind reduced railroad fares for all men graduated in June of 1924, the enactment of a restraining measure against the Weather Bureau to prevent them from forecasting and permitting anything but three sunny days beginning May 31, and the temporary suspension of certain amendments and laws. Perhaps you people who read this will appreciate someone else talking about the Reunion. Therefore, I promise for Bill Correale (although he hasn't promised me) a letter to appear in the next issue of this magazine. And as the radio announcers state at the end of their programs: "Your comments upon tonight's program will be greatly appreciated. Please address your communication to your Course Secretary or to Hal Donovan in care of 139 Girard Avenue, Hartford, Conn."

I have an announcement somewhat belated of the marriage on April 10, 1928, of Frederick G. Garrison to Anne Felice Hopper in London, England. He was until January 1 at Villa Arrechea, Calle del Club, Las Arenas, Vizcaya, Spain, but I don't know what his subsequent address is. — H. G. DONOVAN, *General Secretary*, 139 Girard Avenue, Hartford, Conn.

COURSE II

It is a great pleasure to be able to write the notes for this issue without taxing my brain for words to fill up space and not really have anything to say. Several letters are at hand and here is the dope. The first is from Tom Sawyer, who has turned up out in Chicago as a sales engineer for the Baldwin Chain and Manufacturing Company of Worcester, Mass., and has Iowa, Illinois, Wisconsin, Indiana, and Michigan as his territory. He was in Syracuse for a time, but had moved to Chicago when I tried to locate him. — E. A. Abdun-Nur went to Kansas State Agricultural College, where he was an instructor in the mechanics department for six months and then contracted tuberculosis. He went to Norton, Kan., and last fall had completely recovered and expected to return to work when he was taken with the flu and is still trying to get over the after effects. I am sure we all hope that he will soon be able to take up his duties again.

George Anderson is still connected with Bucyrus-Erie Company, being originally with the Bucyrus Company. I guess the competition was too much for George, so he brought the two companies together. About a year ago, George was in Erie assisting in the consolidation of the two engineering departments and then went back to Milwaukee as assistant to

the engineer in charge of Evansville and Erie products. Harry Hammond is an experimental engineer at the South Milwaukee plant, having previously been plant engineer at Evansville, Ind. Chub Davidson, II, '21, is assistant to the second vice-president in charge of manufacturing and sales. George claims to be still in the ranks of the bachelors and so he can't report any real news.

Dick Bushnell is still associated with the Stone and Webster crowd and is at present working on a new power station for the Puget Sound Power and Light Company near Seattle. Dick is not in Seattle, but still in Boston. He gives a good excuse for not writing because he has added neither marriage nor divorce to his list of accomplishments. But how did we know that? — Homer Davis replies to my letter with a Christmas card signed, "Mr. and Mrs. Homer S. Davis, since September 25, 1928." Now you all know as much about him as I do.

A letter from Brooklyn announces the fact that Perry Maynard is no longer with the New England Tel. and Tel. Company at Springfield, but is an equipment engineer for the American Tel. and Tel. Company in their long lines department in New York City. Perry says that while he was in Springfield he had lunch one day with Shorty Reid who has opened an office for the American Blower Company in Hartford, Conn. Bob certainly must be a busy man judging from his correspondence that he does not have time to take care of. Perry also reports having seen Bill Ridge. That is where Perry scores another one; I have neither seen nor heard from Bill since school.

A letter from Ray Hamilton gives the information that he is superintendent of Linde Air Products Company's plant. The following is also taken from his letter: "George Smith is a high-powered research man in our laboratory here in Buffalo, and Walter Bagby is in Ranger, Texas, representing our interests. Walt took unto himself a bride about one year ago, but George bought a new car instead." Hamilton's letter also gives the information that Everett Martin is with the National Tube Company at Ellwood City, Penna. — Carroll Dunn is a big man in the automobile industry at Haverhill, Mass. (242 pounds). Carroll and a partner recently took over the Oakland-Pontiac agency in that city and reports that business is good. Sid Doyle is working the same racket in the firm of Doyle Brothers of Field's Corner. Carroll reports that Si Duevel is working in Wilmington, Del. — E. H. Hagen is still in Appleton, Wis., and says that he knows nothing to write about. I believe the last time we heard from Irv he was not in very good shape physically, which condition we hope has improved by this time.

The next letter is from old Shorty Manning himself, who maintains that the activities of 1924 are in an inverse ratio to the letters of its members, and after the way you fellows have crashed through I begin to believe him. Shorty is very much absorbed in his work trying to build cars that Carroll Dunn and Sid

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Doyle can sell, attending New York auto shows and the like. Shorty hopes to make the Reunion, and I am sure that he has nothing on the rest of us in that respect. — The last letter is from George Jones who is living and working in Trenton, N. J., for the Public Service Electric and Gas Company, as assistant to the engineer of the Southern Division Gas Distribution. George now has four in his family — two little girls, one about six months and the other about a year and a half old. — Ed Hanley reports that costs are still going up at General Electric. Maybe that is just propaganda so they can burn us on the next motor we have to buy. — Don't stop the good work. — FRED S. HUNGERFORD, *Secretary*, Solvay Club House, Solvay, N. Y.

COURSE X

One of the finest letters we ever received came from Don McCready some weeks ago. On February 4 Mac takes up his duties as an instructor in the Department of Chemical Engineering at the University of Michigan and will also work for his doctor's degree. I will let him tell the rest of the tale. "What happened in the meantime would fill a book, so I'll abbreviate. Leaving school one and one-half hours after receiving the lamb's skin, I found a job with the Western Electric Company in Chicago. I worked on moulding plastics and raised Cain on the modest wage. Then I realized that by marrying a woman making more money than myself, although younger, two could live better than one. This concluded in my marriage to a cow puncher's daughter from Oklahoma in Chicago on June 6, 1925. Shortly after I left the Western Electric for the Universal Oil Products Company to work on cracking of petroleum, treating of the products, and lastly on installing and operating a motor for the determination of anti-knock properties of gasolines. All this in Chicago, too. But the employer was not so good, the wages gave no indication of rising, Al Caprone was busy shooting up the city, and we began to demand more home life. Along comes my present job as head of a laboratory in a paper mill in my home town, the Gilbert Paper Company, makers of rag-content fine papers. About the last night we were in Chicago our first child was born. Buying a home, furnishing it and all the rest bound me down pretty tightly. The first child was a boy who will be two years old in January and who wholly lives up to the city of his birth. Incidentally, he is almost the image of his mother. Developments here were not so good so I started looking around, and two offers popped up at once, one the accepted pedagogy and the other an assistant superintendency. Maybe I'm all wet in the selection, but I like to gamble with things in which no cash is visibly at hand. The second child arrived less than three weeks ago, a pleasant, pretty little girl. And she is more like her father than anything else except herself. What was it that Steinmetz said about our religion being our ego? . . . I hope to be at the Reunion."

So do I. The lack of news in this column has been largely due to my own laziness. Publicly I want to say I am sorry and I hope you will all send me letters soon. — WILLIAM B. COLEMAN, *Secretary*, 52 Liberty Street, Kearny, N. J.

COURSE XIII

Four members of Course XIII were able to get together during the Christmas holidays and the following is briefly what they are doing: Guild Holt is still superintendent of baking for the National Biscuit Company and is located in Baltimore. During the summer Gubby spent four and one-half months in Philadelphia picking up new ideas, but is now back on the old job. — G. Fred Ashworth has finally returned to his old love, that of boat building. Although Fred is not directly building boats he is closely attached to it, inasmuch as he is working for Merriman Brothers, Jamaica Plain, Mass., making yacht blocks and other auxiliary fittings. — El Thayer is still at Fore River and is making himself useful in the designing department. This small reunion was certainly enjoyed by us four, the fourth member of the party being your Secretary, and we only wish that more of the fellows could have been with us.

We are all planning to be hanging around Technology the first of June, and we hope all the Courses will be as well represented as we are expecting Course XIII to be. Letters to all members of the Course during the past month have produced some results, — a letter from Holt and a Christmas card from Frenchy who promised that a full letter was following. We are still waiting for the letter. He has a new address and is, apparently, making a barn-storming tour of Florida. He is located at 1277 Talbot Avenue, Jacksonville, Fla. The biggest piece of news, however, for the month is from Jim Wong who announced his engagement. Course XIII wishes Jimmy all sorts of luck. — GORDON C. JOYCE, *Secretary*, 16 Grove Street, Malden, Mass.

'25 Henry Bevan dropped into the office the other day, so we had lunch together. Henry was married last June to Miss Marian Louise Baker, Simmons '26, and is now living at 283 Chestnut Street, Nutley, N. J. — Mr. and Mrs. R. J. Possiel announce the birth of a seven pound-five ounce daughter, named Roberta Jane, on January 17. — Now that the Course Secretaries are nearly all married, news is harder to get. As far as I know, Frank Fricker and Henry Sachs are the only ones who write to us without being urged. Don't the rest of you get any kick out of these notes?

Don Wheeler has been rushed lately getting a new plant started for his company at Hudson Falls. Besides going up there once, he has been to Boston and Philadelphia. If he goes up there for any length of time he wants me to come up for a week-end of winter sports. The snow-fall here hasn't been heavy enough to make a snowball, so I'd be glad to find a place to use my skis. — Arnie Marshall writes that he went back to Marseilles,

Ill., for Christmas. Since he last wrote me the Y where he lives has come out with some good looking new stationery, much superior to their previous brand. — FRANK W. PRESTON, *Secretary*, 102 East 22d Street, New York, N. Y.

COURSE V

A great many of you have inquired as to the whereabouts and general health of Course V's *enfant terrible*, Henry Sachs. Henry has kept pretty much in the dark of late, and it has been my impression that he was doing social work in Germany among the destitute families of unemployed pretzel-benders. As you all know, the art of pretzel-bending, once so flourishing, has met with some severe reverses in the past decade. The worst of these, of course, is prohibition in the United States, formerly one of the greatest outlets for the pretzel industry. What with one thing and another, the situation is rapidly becoming very serious. As I understood things, Henry was actively connected with Local No. 777, Amalgamated Pretzel-Benders of the World, doing relief work among the wives and families, especially the former, of the idle pretzel-benders. In addition, each night Henry convoked the worshipping, craftsmen in some Rathskeller where he showed them how their knowledge could be put to other uses. Henry's idea was to take advantage of the dexterity and wrist flexibility that is acquired after years of juggling flaccid dough into pretzel form and by showing the boys a pair of American home-grown pajamas and pointing out that the principles involved in the construction of the frogs on these pajamas coincide with those used in the fashioning of the common or garden variety of pretzel. When I heard this rumor of Henry's devotion to the cause, I felt glad for both sides, for at last a leader had appeared to solve the pretzel-benders' dilemma, and, on the other hand, it was pleasing to know that Henry must be in his element for here was all this wealth of other people's business to mind and nobody to cry, "Hold, enough!"

A recent letter from Henry, however, puts a stop to all these rumors. Henry writes from a place called, for short, Johanngeorgenstadt, Saxony, and tells me that he is making gloves. The next part of his letter is so interesting that I'll quote verbatim. "There isn't much exciting news to hand out. . . . The only interesting thing of the year was when I received word from our Berlin office to rush some gloves through and start for Friedrichshafen and see if I could get the *Graf Zeppelin* to take them to America. I received word on Tuesday afternoon at six and had the factory work overtime so that the gloves in question were ready at 8:00 P.M. In the meantime I had gotten Roamin' Rosie, my little coupé, ready, and drove half across Germany to Friedrichshafen, where I arrived at 10:10 A.M. It was a rotten rainy night and those fourteen hours were quite strenuous and practically non-stop, except for a little skid I managed on a detour where the

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road was slippery and my speedometer was registering the equivalent of fifty miles. So I just naturally skidded around a turn, entered an orchard by way of the gate, and knocked a few apples off a tree. My front bumper doubled up and my radiator shutter was slightly bent, but it wasn't bad, and I managed to lose only a half hour. This, of course, had to happen only twenty miles from my destination. The Zeppelin ought to have left but it was windy and they had postponed the departure so, although by rights I was two hours late, I hadn't lost the chance. The list of parcels to be taken along was full, so they informed me, and several had already been refused, but after a while they managed to take it along somehow so that these were the first gloves to be taken across the ocean via the aerial route, at the same time setting a new speed record for delivery. I couldn't get off till the next noon as I had several axles, and so on, straightened out. The following morning I saw the *Graf Zeppelin* take off and it was simple and beautiful, no fuss at all. Not more than a few hundred people witnessed it." After such an experience, I wonder just how Henry could go back to making gloves. His next words give us an explanation. "If any of the crowd gets in these parts, I guarantee to treat them to the best glass of Pilsner they ever tasted, for I know several places that can't be beat."

A letter from Sarkisian came in this morning's mail, and it seems that he is pretty sick in bed and will be for some time to come. His address is 38 Uxbridge Street, Worcester, Mass. Let's all write to him. — It is a great pleasure to tell you, in my usual polished style, of meeting two of the boys recently. I was ambulating through the Institute corridors on a trip to purchase some apparatus, when, believe it or not, I passed a door with V. Harrington inscribed thereon. I knocked and entered in response to a familiar halloo, and sure enough, there was Harrington, hair as wild as ever, a full-fledged member of the Institute staff, and no white coat on him either. He tells me that he spent some time after graduation in Pittsburgh working as efficiency expert for the Tasty-Cake Company, trying to find out what makes store cake taste that way. He gave it up. Now he is back working for his doctorate and trying not to look too sheepish when the misguided frosh call him Mr. Harrington.

Right downstairs I found Temple Patton in the Heat Laboratory, that holy of holies where one wonders how a low chemiker can find his way. Pat was with the Underwriters Bureau for a period and became interested in the physics end of things. While I was there I heard that Ted Coyle is all bound up in chromium plating and also has a new wife, and between the two he has forgotten all about wrestling. Your Secretary wishes to call attention to these new interests.

So much for direct news. Now for rumors. I gather that Robertson is back in this country again, after a foray in France, and is now with U. S. Steel. I'd like a letter from him and also from the

rest of you, notably John Crystal. Anybody heard from him? — GERALD MILOT, Secretary, 25 Upham Avenue, Dorchester, Mass.

26 A letter is at hand from His Honor the President, David A. Shepard, of which a sentence or two will be illuminating: "Mrs. Shepard and I are about to emulate the Forsytes and possess some 'property.' Our very funny but most exciting and interesting little house will probably be completed next week, and I do hope we are seeing the last of this apartment in about ten days. We are to have a back yard that is so big I can't decide whether to have a tennis court or to put in a pool, get a wherry and try to repeat that great act when I turned over in the middle of the Basin one frigid April day!" Dave is with the Standard Oil Company of Louisiana in their research laboratory at Baton Rouge.

Neil MacLaren, who has been an instructor in the engine laboratory here at the Institute, and has just left to go with the Brown and Sharpe Manufacturing Company, brought in a recent letter from Malcolm McNeil, a part of which is quotable: "About a week ago I was in New York for an evening and I looked up our old friends, Parkinson '25, Preston '25, and Don Wheeler. They've got a nice little apartment right next to a church, so they don't have to get up Sunday mornings to go, and even dodge the collections, which isn't so bad, eh? The best part of it is, as a sideline, these mechanical engineers have taken up cooking, and on Christmas they roasted a turkey with all the fixings. It was so darn good they say that even a professor couldn't have done any better, and by that they mean a cooking professor, not a Technology professor. Well, you can take it from me, those boys are all going to make some little girl happy."

"If you don't like brown-eyed, beautiful girls, stay out of the South." The bird that wrote 'them woirds' sure knew his groceries. I have been down here a week and so lazy I haven't had much chance to give the Shebas much attention. This being Saturday afternoon, however, I decided to turn from labor to refreshment. And, man oh man! What oodles there were to be seen. You remember the beautiful princesses they tell about in fairy tales? Well, the bozos that described them must have come to Atlanta to get ideas. I really never knew they could be constructed so well. This city could easily get away with the statement, 'When better chassis are built, Atlanta will build them' and how."

Mooney Owen, Course XV Secretary, has left the banks of the Potomac for the sidewalks of Cleveland, Ohio. He is now employed by Sears Roebuck and Company, and at the present he is occupied in taking a training course preparatory to taking up the duties of merchandise manager at one of their new stores, or similar duties at the main office. His address in Cleveland is 10902 Fidelity Avenue. Course XV men can write to him at that address.

Al Ruff has written in from York, Penna., as follows: "At present Masterman, Hinckley, Connelly, Barry, Sackett, Novo, and myself are located in the home office of York Ice Machinery. The other fellows are mostly in New York City. Walt Metcalf just came back with me and is situated in our New York office." — A recent Boston *Evening Transcript* recorded the engagement of Robert Frederick Flaxington to Miss Leona Adams Besse. — J. R. KILLIAN, JR., General Secretary, Room 11-203, M. I. T., Cambridge, Mass.

COURSE II

New Year's resolutions or the Christmas spirit or some other equally potent influence came to the rescue this month, and I've actually heard directly from three members of the Course. Would that their example might leaven the other eighty-odd individuals who are alleged to be up and coming mechanical engineers of '26.

It was with deep regret that I learned of the death last October of Andrew Lambertus at his home in Beachmont, Mass., from a case of acute appendicitis. Although he had had a previous illness since leaving the Institute he had recovered and been in apparently perfect health for over a year previous to this fatal attack. Andy was quiet and unostentatious, but he had a number of very close personal friends and will be missed by them all.

W. H. Russell, who sent me the news of Lambertus's death, is with the Whitlock Coil Pipe Company of Hartford, Conn., in the capacity of sales engineer, although his duties carry him somewhat outside of that designation at times. Heat exchange apparatus is the medium for his efforts. — Bob Nisbet writes in to report little change in the Schenectady sector and to express gratification concerning my recent communication to The Review concerning his future job, claiming that he had not been aware thereof. At present he is struggling with the mysteries of the ventilating game and sees no direct connection to managerial openings. He reports that A. H. Brown is now Secretary of the local A. S. M. E. branch.

A greeting card from Mort Woodason revealed that he has moved from his old haunts in Brookline and is living the year round in a small town twenty-three miles out of Boston. His new address is Asbury Street, South Hamilton, Mass. — I understand that Ned Lane has decided to abandon his activity as a pipe salesman in the South and is scheduled to enter the University of Pennsylvania Medical School on February 1. Just another example of the versatility of these M. E.'s.

I guess that about completes my information at present. Nisbet's reaction suggests that one way to get a letter from the many lost, strayed, or stolen members of the Class is to go into the fiction field and then await the deluge of indignant individuals denying the libels. I hope it won't be necessary to resort to such tactics. For the information of other secre-

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taries I will include here the news that Dave Evans '24 is married and that I understand that Ernie Hinck '27 was married on January 25. His fiancée is Miss Louise Deetjen of Montclair, N. J. — JOHN B. JACOB, *Secretary*, 1037 South Kenilworth Avenue, Oak Park, Ill.

COURSE IV

This month I have received notice of an event, which, due to the phlegmatic quality of the class correspondence, has hitherto failed to reach me. It is an event of great importance to the architectural profession — the birth of a son to Leon and Mrs. Zaitzevsky last April. Since then, Nikita, the baby, has developed Romanesque characteristics, having grown decidedly wider in proportion to his height. Leon is with the firm of Maginnis and Walsh in Boston. — Word has come that Bob and Ruth Dean are now in Italy, after spending some time in Paris. — Fred Buenz remains buried in the wilds of Texas and refuses to return to civilization. Elevators, street cars, taxis, and other complexities of our modern urban life so disturb his equanimity that he has voluntarily withdrawn to the quiet spaces of the West, there to concentrate upon his life work — the development of a pocket rendering machine for the adequate presentation of architectural drawings in the fourth and even fifth dimensions.

That renowned mathematical genius, Don Homsey, in collaboration with the great Buenz, had practically worked out a solution for flexible and stretchable drawing paper, capable of expansion to any desired scale, when he was overcome by the silence and solitude of aforementioned western spaces. He has returned to the seagirt city of his architectural youth. However, his epochal investigation will be resumed at some future date, so the loss is only apparent. Further news than this I have not. — ALAN K. LAING, *Secretary*, 2413 Ohio Avenue, Cincinnati, Ohio.

COURSE X

Mirabile Dictu! One of our members has at last crashed through with some news, and none less than our own Wes Hemeon, who reports he is still unmarried. Wes is still in Rockland, Maine, with the Rockland and Rockport Lime Corporation.

The Course unites in its best wishes for connubial bliss to Elmer Johnson, who married Miss Grace Lucille Musolf. The couple is now living at East Towas, Mich., near Alabaster, the seat of Elmer's U. S. Gypsum plant. — Al Lamoureux has been doing fine things at the Denison Manufacturing Company and is now in charge of all dyeing operations there. — Wes was deeply concerned with the lack of news appearing in these columns and rightly so. Your Course has therefore wired several sleuths operating in various parts of the country to inform him of the actions of our fellow members. The first report has just come through, but is hardly fit for print as yet. However, watch for the next issue of The

Review and I promise you you will not be disappointed with stories of the incomings and outgoings of the members of this illustrious Course.

Oh, yes, I almost forgot to tell you that we are wintering here in Houston, Texas, and find it a most enjoyable place. The dope is that I am trying to find bigger and better oil wells so that the public at large may enjoy gasoline at no less than a dollar per gallon. Don't forget to watch for the next issue! — LEE CUMMINGS, *Secretary*, 4017 Butte Avenue, Houston, Texas.

'27 There seems to be an unusual dearth of material for your Secretary's splurge this month; even the clipping bureaus, upon which one can usually depend for an item or two, appear to have failed. Down in the bottom of the file, however, we drag out a clipping from the Boston *Evening Transcript* for November 14 in which the parents of Miss Ruth Drucille Rickaby announced her engagement to Charles H. Darmstadt, who, your Secretary believes, was affiliated with our Class while at the Institute. — Several of our Course Secretaries crash through this month, and we here welcome George Morrill, the new Secretary for Course VII. Dave Knox sent in some notes just too late for the last issue, but your Secretary is unable to remember where he filed them. But more about that later.

During the month we had a brief visit from Jack Wever, VI, who was back at the Institute for a visit. At the time he was with the Westinghouse Electric and Manufacturing Company in the small turbine division at Philadelphia. Jim Collins, VI, was working there, too, Jack says. Later on, Dave Knox dropped in for an evening. He and your Secretary attended the annual banquet of *The Tech*, after which they had plenty of opportunity for story swapping. Dave is having no little success as a sales engineer for the Perthemby Injector Company which makes some sort of a thingamajig for controlling the temperature on paper driers. On the road most of the time, he thought that he would not get back to Detroit in time to contribute anything for this issue. He reports that he addressed a meeting of paper mill superintendents up in Wisconsin recently. It was an emergency job, but he got away with it even though he had been in the business for about six months, they for an average of twenty years. Dave had a letter from Al Billings, who is with the Kelly Springfield Tire Company at Cumberland, Md. Al is married, but for further information we shall have to wait until Dave sends in his formal report next month. — Among the other distinguished personages who received their S.B. and advanced degrees at the January Corporation meeting was Harold Heins, Secretary for Course VIII. He got the S.M. degree in physics.

This morning your Secretary had a call from Lyman B. Johnson, XIV, who, with Larry Burns, is an assistant in Dr. Stockbarger's laboratory of electro-chemistry. Dr. Stockbarger, the chap who had the

article about ultraviolet radiation in the November Review, was to have addressed the National Housing Association Conference at Philadelphia, but he was taken ill at the last moment and sent Johnson down to deliver it for him. Johnson reports having had some embarrassing questions thrown at him after the paper was concluded, but he managed to get away with his answers. He had no time to spend in looking up Nat Cohn while in Philadelphia.

Everyone is requested to note the change in address of your Secretary, who left The Review on February 1 to join the staff of the General Radio Company in Cambridge. The address appended to these notes is his home address. So far he has been granted no official title. The one most suitable is that suggested by Jim Lyles in a recent letter in which he says, "Here's hoping you like your new job as widget master of the General Radio Company."

Incidentally, Jim asked if the Secretary won't get him a correct address list of the New York classmates because, he says, "I actually have had a fit of some sort and am trying to get things under way toward a class dinner. Having found Deke Crandall living only around the corner from me I hope to get him to help me." — JOHN D. CRAWFORD, *General Secretary*, 7 Goodwin Place, Boston, Mass.

COURSE IV

This column has been silent for rather a long stretch of time — so long, in fact, that I have been asked what the big idea was by several of the boys. Simply this; no news, no column. So, fellows, get on to yourselves and drop a line now and then to your Secretary at the address given below. We'll print anything you write, provided it's fit to print. Let's have something in these columns every issue.

In keeping with the spirit of the time our friend, F. S. White, decided to start the New Year right, so he got married on New Year's Eve. That's a resolution you all might imitate. I met Forrest S. with his bride-to-be on Summer Street the day before, and he told me of his taking on the responsibilities of married life. He is working for Jackson and Moreland, electrical engineers of Boston, and when his days of honeymooning are over, he will be stationed in Hoboken, N. J., to aid in the electrification of one of the railroads down there — the Lackawanna, I think. Fred Brucker was the best man at the wedding and he is still the best man in the employ of Maurice A. Reidy, consulting engineer, at 44 School Street, Boston. I was in Fred's office one day during the Christmas holidays, and he is delighted with his work in structural design.

Bill Duffy and I have had a couple of get-togethers these past months, for Bill is still with the J. W. Bishop Company as an assistant superintendent. He is doing his best on some hospital buildings at Lowell and casually remarks that, although he hasn't made his first million as yet, nevertheless he likes the construction work very much. Incidentally, says

Bill, those one-quarter- and one-half-inch spacings that we used to worry about in Professor Peabody's class are things that simply are not.

Nary a word have I received from Johnny Kuhns since he plunged into the realms of matrimonial bliss, or from Seigle whom, I presume, is still with Coolidge, Shepley, Bulfinch and Abbott. I am told that Saul Peraner is now in Boston working with his father in the contracting business. Our friend Cahill is married too, and the last time I heard from him he was in Washington working for the Department of Agriculture.

A card all the way from Trinidad, Colo., came to me wishing me a merry Christmas from our Beau Brummel, Henry T. Lyons. Henry T. is certainly seeing America first, but I wish he'd let us know some time what he is doing. I believe he is working for the Firestone Tire and Rubber Company. Our mates from Canada have evidently forgotten how to write, because I haven't heard from Bourbeau or Rousseau since school days.

I was in New York for a few weeks the first of the year and during my stay I enjoyed several reunions with our friend Patterson. The Turner Construction Company is Patt's employer, and the past summer found him in Virginia working on the new James River Bridge at Newport News. At the present time Pat is working in New York, and a letter addressed to 210 East 58th Street, New York City, would find him. Patt and I had some enjoyable times in the Big City, and our friend George Evans joined us in our celebrations. George, too, is with Turner in New York.

As for your Secretary, the Portland Cement Association still gives me my month's salary as field engineer in Rhode Island. During my stay in New York City I attended the annual conference of the Association's field engineers and week's course in reinforced concrete building design and construction. Regular classes were held each day, and practically every phase of construction was discussed. To me it seemed just like old times but without the quizzes. And so as the circus man says, "That's all there is, there isn't any more." — THOMAS E. HEGARTY, *Secretary*, 9 Mount Vernon Street, Somerville, Mass.

COURSE VI-A

News is beginning to filter in from the departed spirits. Two or three good letters, with more or less libelous comments — any of which are news. — Acocck is still on Doherty's "Engineering General" work at Schenectady. — Burckes, it is rumored, has gone with the American Tel. & Tel. Company and is working around repeaters. — Dick Cutts is still in Lynn trying to glorify General Electric meters. — On last reports Bill Cave and Joe Hammond were still in Stone and Webster's Boston office. — Church and Weed are in the same office at the Boston Edison. It has been vaguely rumored that Weed is about to become a Benedick.

Donald and Jim Snediker are with the American Tel. & Tel. Company, working in and out of New York City. Donald has won the VI-A publicity prize by getting a beautiful picture, uniform and all, in the *New York Times*. The title on the picture did everything but put a halo on his head and a harp in his hand. The American Tel. & Tel. Company tried to work some fat off Jim but gave up after a good try. — Grew is with the Southern New England Telephone Company working out of New Haven. He has been working on interference problems. — Grierson is in the Bell Laboratory in New York — Halet is reported at Robert College, Constantinople. — Fred Harrington is working for the Brooklyn Edison chasing kilowatts from Brooklyn to New York, or enticing the New York brand over to Brooklyn. I don't know which is correct. — Jones is taking the sales training course with General Electric.

Leach and Tucker are in radio with the General Electric. This pair probably account for a lot of new static that hasn't been known before. — Mott is in the Bell Laboratories in New York. — Muchnic is at the Harvard Business School. He'll be educated yet. Give him time. — Joe Newcomb is in Beaumont, Texas, with the power company. — It has been said that Bill Rudge is charging along in his usual way in Pittsfield. Russ Talbot is doing his stuff with the signal division of the Pennsylvania Railroad. — Freddie Wilcutt was in Hoboken from the last reports. If he hasn't gotten part of New England out of his system by now, he never will. — Colonel Woods was on an assignment in Buffalo. So far his movements have been somewhat mysterious.

Everyone that I've heard from seems to be well pleased with his work. The general tone of the letters has been such that I've been led to the conclusion that VI-A has decided that it is a pretty good world after all. Those of you who read this and disagree, let me hear from you. Those of you who read this and agree, let me hear from you. I'll try to spread the glad words on to an anxious population. — T. H. MAWSON, *Secretary*, 923 South 17th Street, Birmingham, Ala.

COURSE VII

I think that it is about time we had some news in *The Review*, but I have not much to give. George Darling originally had the job of writing up the news, but he turned it over to Jennison, who in turn wished it on to me. Therefore I suppose that I will have to do my best or we will never have our name in *The Review*.

George Darling is still with the Health Department of Detroit, but what he is doing and how he is coming along I do not know, as he has not written to me for a long time. — Carl Wies is at the Yale Medical School, but I have not heard from him since we graduated, so I have no news about him. — I. D. Thrasher is at Johns Hopkins Medical School. I gather from the last letter that I received from him that he is having a good time but working very hard. He has planned a long grind for himself as he expects to

take two years of general work on a rotating service and then spend at least three to five years on a rotating surgery service. I hope that he gets through some of his planned work before he is an old gray-haired man. — Shorty Foster has left the General Sea Foods Company of Gloucester and has taken a position in New York with some telephone company, but I do not know where. He is evidently tired of fish and is going to try something entirely new. — Jennison is here at the department, but, as he did not want me to write anything without letting him see it, I am not going to say anything about him. That will please him more than anything else.

As for myself, I am still at Technology as a research assistant in the department. At present I am making abstracts of the literature on food technology. The new Secretary who has the job because no one else would take it. — GEORGE G. MORRILL, *Secretary*, Room 10-403, M. I. T., Cambridge, Mass.

COURSE X

The Course X Secretary has had an easy time for the past few months. There have been few letters to transcribe into notes and not even indirect news to report. If this continues and the habit of leisure grows, I have grave doubts whether a letter with even stirring news can move me to forsake the comfort of my easy chair to battle with the typewriter. — Lyn Perry has written from 5056 Washington Boulevard, Chicago, that he has left the Atlantic seaboard again, but this time to a less remote spot than Chile. Lyn wished to get away from laboratory work so he managed a transfer so that he now is filling and emptying tank cars of fuel-pitch and creosote oils, still with the Barrett Company.

Samuel Kaswell, once known to us as Koslofsky, now lives in Jersey City. He has given up the idea of working in the Patent Office and is now with L. S. Sonnenborn and Sons, manufacturers of soaps, oils, and other textile products. His main desire seems to be to collect enough money to go into business for himself, but, if his letter is a prospectus, he is out of luck. My investable surplus would scarcely buy a clean test tube. — Beyond any doubt Ed Damon is engaged. I received the formal card of announcement and then a letter from Ed, and lastly John Crawford sent me the usual clipping from the *Boston Evening Transcript*. In brief the clipping reads as follows: "Mr. and Mrs. Henry H. Harris of Lowell announce the engagement of their daughter, Miss Shirley Harris to Edgar Hagar Damon. Miss Harris is a graduate of Smith College in the Class of 1926, and of the Cambridge School of Domestic Architecture and Landscape Architecture. The wedding will probably be in the fall." Ed is still with the Caleat Company in Skellytown, Texas.

Pub Whittier has just taken charge of the technical information service of Congoleum-Nairn Inc. Beside the work of guardian and editor of all reports, and

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abstractor of technical magazines, he makes speeches to the district salesmen and representatives which bring back the good old medicine man of the past. Behind a table covered with glassware and formidable testing apparatus he stands, demonstrating the wonderful product Sealex Linoleum as he talks. With a callope and a tent the illusion would be complete, although Pub really needs a drooping mustache or flowing beard to add to his impressiveness. — DONALD H. SPITZLI, Secretary, 751 High Street, Newark, N. J.

28 The Class of 1928 steps out this month with more interesting news than it has had for months. Credit for this is mainly due to the efforts of four hard working Course Secretaries: George Palo, I; Al Dempe-wolff, V; Al Gracia, X; and Bus Ruch, XV. In writing to your Course Secretary, please remember that the dead line for final copy for this section is the twentieth of each month which means that your letter ought to reach him before that date.

Our modern popular song writers often write love lyrics of almost Utopian character. We have all heard of that "Cottage Small by the Waterfall" and "My Bungalow of Dreams," but Johnnie Stack of Course XVI is going to do them one better by making his dreams come true. On February 2, Miss Helen Sturdevant changed her name to Mrs. John Stack and the happy couple are now at home at 67 Avenue C., R. F. D., Hampton, Va. The unusual part of this romance is found in this quotation from Johnny's letter: "I nailed a bungalow out in the country, and it almost overlooks the scene of the battle between the *Monitor* and the *Merrimack*." I am glad to have this opportunity on behalf of the Class of 1928 to congratulate Johnny and Helen and wish them happiness in their bungalow down in Virginia.

Mr. and Mrs. J. A. Buswell of West Newton, Mass., recently announced the engagement of their daughter, Miss Josephine Buswell, to Albert J. Gracia, Secretary of Course X. No definite date has been planned for the wedding. Atta boy, Al, old scout! — Bill DuVernet, II, is still with the New York Telephone Company and is now working in the General Plant Supervisors Force on Long Island. Bill says that the work has been somewhat dull because he has been left to his own devices without much knowledge of telephone engineering to help him out.

Bill Smitheringdale, who was graduated with a Doctor's degree from Course XII, is now out in Vancouver, B. C., where he is working on the engineering staff of Stewart, Batten and Associates. — Announcement has been made of the engagement of Miss Sarah Redfern, Simmons '29, of Woonsocket, R. I., to Bill Hall of Course VI. Congratulations, Bill! — Louis Scherer, VI, is now working for the Sears Roebuck Company in Chicago with Burnell, Gray, Caldwell, and Gaffney, the Course XV delegation. — I have received this information about Ford Sammis which will answer a question

from Bus Ruch. It appears that the aforesaid Course XV student is now working for the H. L. Doherty Company and is living with Ed True at the Y. M. C. A. on 57th Street, New York. — Johnny Reyn- ders, II, recently left the Congoleum-Nairn, Inc., and is planning to go with the Pratt Whitney Tool Company. He says he is disgusted with the overpopulated State of New Jersey.

Why not sit down while you have the inspiration and write your Course Secretary that long postponed letter? Addresses of Secretaries for Courses I, V, X, and XV are given with the notes for these Courses which appear in this issue. The others are as follows: Course II, Joseph A. Parks, Jr., 14 Caranabua Street, Roslindale, Mass.; Course III, Walter J. Nock, 17 Martinez Castro, Mexico City, Mexico; Course IV, A. Reginald Keith, 24 Maple Street, New Haven, Conn.; Course VI, Peter H. Kirwin, 1201 Fifth Street, S. E., Minneapolis, Minn.; Course VII, Send direct to The Review Office; Course VIII, Arthur G. Hall, 286 Commonwealth Avenue, Boston, Mass.; Course IX, George D. Mock, 12 Naples Road, Brookline, Mass.; Course XII, send direct to The Review Office; Course XIII, Gilbert J. Ackerman, 9 Gifford Avenue, Jersey City, N. J.; Course XIV, Charles E. Berry, 103 Nott Terrace, Schenectady, N. Y.; Course XVI, John P. Bailey, Airplane Branch, Wright Field, Dayton, Ohio. Come on, Twenty-Eight, we have to write now to stick together. Give yourself some publicity! Let's hear from you! — GEORGE I. CHATFIELD, General Secretary, Room 11-203, M. I. T., Cambridge, Mass.

COURSE I

Chronologically this news can go back to the day after Thanksgiving. On that Friday Jim Morse and Bill Hammond were around the Institute. Jim had returned temporarily from Texas. The climate down there hadn't agreed with him so he was given a month's leave, to return January 1. Bill had worked the Pennsylvania Railroad for a little vacation and had come up to spend Thanksgiving and the week-end at home. — The *Proceedings* of the A. S. C. E. have located a few of the fellows, otherwise unheard from. Sam Weibel was listed as working as chairman for the Pennsylvania Railroad and living at 74 Clinton Avenue, Newark, N. J. Archambault was located with the North Shore Power Company at Three Rivers, Quebec, and Gaucher must now be fully recovered from his illness of last summer inasmuch as he is in Texas working with the Texaco people.

About Switzer we have had conflicting reports, one that he is with the Lehigh Valley Railroad, and the other that he's down in Cuba. Both probably are or have been correct. Shipley, according to *The Tech*, reached Kelly Field about November, riding his trusty motorcycle and anxious to get into aviation. — I saw Ed Holmes in the track house the other day. Ed is working for the government and has been in Peekskill, N. Y., but was transferred to North Carolina late in January.

I saw Ken Clark in Chicago while on our way home for Christmas vacation. Ken and two other fellows are living in an apartment in the north end of Chicago. We had supper there, and, fellows, Ken and his pals are real cooks. Roasting chicken was Ken's job on Thanksgiving. During December, Ken was working on the night shift on a small tunnel being built in connection with one of the sewage plants of the Sanitary District. — Luby, we learned, quit his job in Texas as it wasn't giving him the experience that he wanted. A Christmas card from Jack showed us only that he was back home in St. Paul.

This is being written during the vacation between terms here at the Institute. During the first term Mangurian was the only one of the gang to really start a thesis. Under Professor Terzaghi he is studying the effect of frost on certain New Hampshire soils for the information of the Bureau of Public Roads. For a while George had half a dozen of Major Smith's men doing his work, which consisted of digging holes in the corner of the soccer field in which to put his samples. But, with that done, George is now doing his own thesis.

Now for the letters. This one from Locklin, still with the Alabama Power Company, should be especially interesting to Option 3 bunch. "I have been down to Mitchell Dam for a while. Mitchell is the home of the backwater suppressors. Have you forgotten what they are yet? (Never heard of them, L. B.) I was also down to Jordan Dam when the acceptance test was made. Jordan is a new outfit having four 29,000 generators with about an eighty-foot head. Professor Allen of salt-velocity fame came down and measured the water. He has quite a system but it takes a lot of rigging to get the pop valves and electrodes in the penstocks. Yours truly, with memories of Triple E Lab, read a voltmeter, high, wide, and frequent. There is another plant, Lock 12, located on the Coosa River above Jordan and Mitchell. These are all stream flow plants and have to take what comes. During flood, the plan is for Jordan to backwater upon Mitchell which is supposed to keep its head by means of the suppressors. The only storage plant is Martin Dam with two plants below it, Upper and Lower Tallahassee. It makes quite a set up as far as load dispatching is concerned. Of course, during the wet season the stream flow plants carry the base load and the storage plants the peaks. The reverse is true during dry weather. There is considerable steam to fall back on, about 115,000 k.w. I think, and a new 60,000 k.w. plant nearly completed."

From Al Daytz, still with Phoenix Bridge: "December 5 was six months since we were graduated and during that time I have countersunk, chipped, and looked out for so many rivets and rivet heads that I can't look a rivet straight in the face. For the last few months our squad has been working on a large bascule job for the city of Providence. I have detailed all the floor beams for the non-moving part, the trunnion post bracings, the

stringer laterals, the sidewalk and roadway stringers for the bascule span." — Bob Cook writes, "Yesterday, for the first time since I've been in Venezuela, I got a glimpse of the country as it is supposed to be. Our little party of four engineers and twelve natives set out by boat for a place called Tia Juana about nine kilometers away. We were to split into two parties, one running a railroad line and the other a traverse around a plot of land. I happened to be with the railroad party. We went off into the woods, seeing big snakes everywhere, and hundreds of brilliant birds. The line carried us through a big swamp and I had to wade up to my waist. It was all very interesting, but hot, hard work. Take my advice, George, and go to Alaska when you finish school. Have you heard that Mike Cohen is married? He must be the first one in our part of the Class. [Not quite, Bob.] The newlyweds are living in New York where Mike is working for a consulting engineer." We've since heard that Mike is back in Lowell, Mass.

Bill Kirk passed on to us a letter from Fleming. Tony has a good start towards an eventful career. Here it is to date: "Listen to my history. I left the land of the bean and cod on June 17 (I remember the date because the State House was closed) and headed for Southwestern Kentucky on the Ohio River. Spent the next two months waiting for the high water to go down so that we could get out into the coffer dam and work. When the water did go down we snapped to it and finished the dam on September 24. This made it necessary for yours truly to get a new job, which he did, as dredging inspector in Sandusky Harbor, Ohio. Never take a job in Sandusky, Ohio. That was the world's worst town. I was there two months and didn't even get acquainted with the fellows I was working with. Was I lonesome? I even got to talking to myself. The place was so bad that I took this job as detailer with Hamilton (Ontario) Bridge Company. I have been here since December 1 and did my first detailing today, December 27." Tony hopes to be back here next term to finish up and get his degree. And that's the story. — GEORGE P. PALO, *Secretary*, M. I. T. Dormitories, Cambridge, Mass.

COURSE V

A nice long letter arrived from Jack Grant. He writes from Corning where he is working at the Pyrex works. Poor old Jack let them know what a demon he was at research, so they gave him a problem to work out. For two months he has been setting up apparatus to determine the water content of glass. While busy at that he complains of having to wash ground quartz in ton lots with hydrochloric acid. Jack thinks that Corning is pretty dead and awfully expensive. By now most of us have probably discovered that the deader a town is the more expensive it is apt to be. Jack's address is 92 East First Street, Corning, N. Y.

Max Parshall, whom I visited in Colorado last summer, wrote recently and indicated that he was seriously consider-

ing returning to the Institute in February. His health is much improved. Max spent a lot of time this summer on field trips in the Southwest. — I have been working steadily for A. Schraders and Son of Brooklyn. They make tire valves and other accessories. I was originally employed as their physical metallurgist and as such have been using my metallography notes more than ever. If some of you long lost sons of Course V will write, I may be able to pound out some more news for our column. — ALBERT S. DEMPEWOLFF, *Secretary*, 449 West 123d Street, New York, N. Y.

COURSE X

All and any appropriate exclamations and ejaculations are now in order. Your Secretary received two, mind you, two letters from course members within a week of each other. The letters are the first since September that we have received. Now, with some news at hand, Course X is back on the air.

Fred Zappini writes from Somerville, Mass., with a bit of news of some of the fellows. Sarkisian, we understand, has left the position that he has had since school and is now working for his father. We always noticed that Sarkis liked to play a "family game," even at bridge over at Walker. He and Bud Reynolds as partners used to play a "do or die" game, only it was mostly die for them. — We have word that Toone is still at the Institute, working for his Master's degree in the organic laboratory. We just know that Gilly Toone won't be satisfied until he has all the degrees Technology will grant him. He never did things half way, even as an undergraduate. Good luck, old man! — Carl Lockhart and Gus Stachelhaus are reported as being occupied in some work for Professor McAdams. We hope the report is true, for that is the only way that pair could be kept out of trouble. — Lastly, Fred Zappini writes of himself and tells of his recent change of companies. Starting out with the Cities Service Refining Company, he readily took to the oil business for, of course, we all know how smooth Fred can be. However, when the Beacon Oil Company offered him an opening he took it, for Fred never did pass up anything that was offered him. So this is no surprise. We all wish him well, I am sure, in his new work.

Then, from Dayton — Herbert Parmalee Dayton, we mean — comes another letter of much interest. Herb gets his Master's in June and expects to enter the oil business. Another recruit to the *Erdol Gesellschaft* as the German has it. From Herbert we learn that Mike Comperchio gets through in February and will start engineering something or other right away. Carlos Ferre, Herb reports, is down in Porto Rico waiting for the word to leave for Venezuela where his father is starting a sugar plant. We wonder how Carlos gets his fencing now. Perhaps he will have the job of going around and fencing in that sugar plantation.

There is a bit of Akron news at hand. Gordon Collins has recently been transferred from the compounding division to

the chemical engineering department, where he finds the work more to his liking. Beveridge and Reynolds are still going "great guns" in their respective departments. Ray Jack, with Firestone Tire and Rubber Company, finds development work so much to his liking that recently he developed a bad cold. — We must acknowledge, as must all men of science, the great service rendered by the recent publication in the *Journal of Industrial and Engineering Chemistry* of the Taylor-Southwick research on high pressure reactions.

As a final word let us say that we can't have a column unless you fellows do your share. If your Secretary receives letters, you read of it in The Review. If he receives none, Course X notes are notably absent. Let us have a column every month. — ALBERT J. GRACIA, *Secretary*, 222 West Market Street, Akron, Ohio.

COURSE XV

Although news of Course XV men is unbelievably scarce, the future is rosy-tinted. This may be proved by the following logic: Course XV men are now so busy getting ahead in their chosen lines of work that they forget to write in and tell one another what they are doing. Naturally, with such a display of ambition toward their work, in the course of not more than two years, all will be enjoying the services of private secretaries who will, of course, see to it that the monthly letter is written to The Review. Any Course XV man who can find a flaw in that logic and will write to us and tell us something about himself will be mentioned in the next issue of The Review. (This includes Bunny, MacQuarrie, and Jope.)

Norm Fournier and Frank McGuane were the only Course XV men heard from this month. Norm enlightens us with a choice morsel of scandal. It seems that MacQuarrie, McGuane and Norm work for the same company — the New York Tel. and Tel. Now comes the sad part. Norm leads us to believe that MacQuarrie has enhanced the beauty of his physiognomy by the addition of a peculiar hairy growth on his upper lip. Norm isn't sure what Mac calls it, but he (Norm) calls it a shame. Although not openly, Norm implies in his letter that he is to be one of a couple of important characters in a marriage ceremony. We await further particulars.

As for myself, I have recently been transferred to the engineering efficiency division of the Goodyear Tire and Rubber Company. The work consists of wage setting by the time and motion study method in the engineering departments of the company. Although Professor Haven's machine design gave some of us considerable trouble during our last year at the Institute, I, for one, have found several occasions to use some of his principles to good advantage. If any one can inform us of the whereabouts of one Ford (Major) Sammis, such information will be gratefully received (adv.). — PAUL E. RUCH, *Secretary*, 853 Harvard Street, Akron, Ohio.



Technology Club of Chicago

The Technology Club of Chicago held a special luncheon on Tuesday, December 11, at the Electric Club with Professor William Emerson, Head of the Department of Architecture at the Institute, as guest speaker. About twenty Technology men, a large percentage of whom were architects, heard Professor Emerson give the latest news about the Institute, which included the desire of President Stratton for a closer cooperation between industry and research and for a course of lectures on city planning now being given by the man in charge of that work for New York City, which may some day result in a new option with a degree at Technology. Finally Professor Emerson expressed his own personal views on the best methods to present the subject of architecture to the students at the Institute in that course. His talk aroused a great deal of interest and enthusiasm among those present, and a lively discussion which was led by John L. Shortall '87 followed, centering around the opportunity for architects to render a splendid service to their cities by serving as advisors on the city planning and zoning boards.

The Chicago chapter of the American Institute of Architects held its regular monthly meeting at the Palmer House in the evening, and Professor Emerson was also guest speaker for this occasion. Alfred H. Granger '90 is President of the Chicago chapter this year, and Professor Emerson was his guest during his stay in Chicago. We are a long way from the Institute here in Chicago, and we hope that other members of the Faculty will be able to meet with us.

The Club gave a dinner and smoker at their usual meeting place, the Electric Club, on January 9, with Professor William T. Bovie, head of the Department of Biological Physics at Northwestern University, as the speaker of the evening. Thirty-one Technology men and nine guests enjoyed an appetizing chicken dinner prepared by the well-known chef of the Electric Club and exchanged their experiences at the Institute between courses. Jimmie Banash '06, who established himself as the World's Open Pitch Champion with the Technology Club of New York, having enjoyed the greatest prosperity during 1928, brought two guests; other Technology men came with one guest; while those less fortunate came alone. Professor Bovie was unable to be present at the dinner, but while we were waiting for him to put in an appearance, President Maltby '22 suggested that each Technology man stand up, give his name, class, and an outstanding incident that had befallen him during his stay at Technology. J. Sterling Kelly '22 being recognized as the most eloquent and

polished speaker present was selected by President Maltby as lead-off man on Technology reminiscences and many amusing incidents were related. One bright student in a physics recitation had attempted to explain Boyle's Law as the discovery of the fact that water boils at 212° Fahrenheit.

Professor Bovie was introduced by President Maltby, and he gave a very interesting illustrated lecture on the effect of radiation of all kinds — including ultraviolet rays, radium, carbon arc lamps, and sunlight — on plant and animal life. Professor Bovie also brought out the future possibilities and present results already accomplished in the treatment of disease by radiation. A lively discussion followed the lecture, led by James L. Fyfe '97, who was very much interested in the effect produced by ultraviolet rays after passing through window glass. A former President of the Technology Club of Chicago made the remark that if a professor of Northwestern University could draw an attendance of forty, one of our own Technology faculty members should bring out at least sixty loyal Technology men to welcome him at our next smoker, and we hope that circumstances will make it possible to test his prediction. — CHARLES J. WARD '15, *Secretary*, 1125 First National Bank Building, Chicago, Ill.

Detroit Technology Association

The regular monthly meetings of the Detroit Technology Association which heretofore were on the first Monday evening of each month have been changed to the first Tuesday. This change will eliminate interference with other engineering society meetings held on Monday. The meeting place, as previously, is the University Club, East Jefferson Avenue and Russell Street. After the regular December meeting, which was well attended, informal bridge foursomes were selected and a bridge party ensued.

At the regular January meeting there occurred the annual election of officers which are as follows: Tredick K. Hine '16, President; Edward A. Ash '22, Vice-President; John E. Longyear '26, Treasurer; and George F. Gokey '21, Secretary. At this meeting it was decided to have some of the new Ambassador Bridge engineers as our guest speakers at the next meeting with movies of the bridge construction and progress. Preliminary plans were also adopted regarding our annual dinner which usually occurs in April or May. It is too early to disclose any information concerning this feature affair, but it is hoped that it will out-feature all previous meetings. — GEORGE F. GOKEY '21, *Secretary*, 8100 East Jefferson Avenue, Detroit, Mich.

M. I. T. Alumni Association of Cleveland

In order to stimulate interest at the Technology luncheons in Cleveland, the period between luncheons has been lengthened from once each week to once each month. They will be held the first Friday in each month at 2 P.M. at the Allerton Club Residence.

Inasmuch as most of the Alumni in Cleveland are very busy with their own particular specialized work, it was found that some method should be devised to inform them of current affairs at Technology. The method adopted was to place a subscription for *The Tech* and to turn over the issues received for the current month to some Alumnus, who would make a summary of the important news events and items of interest and give it to all in attendance at the luncheon. It was found that in this way a good many of the Cleveland Alumni can be kept in much closer touch with the affairs at Technology, and they have an added reason for attending the luncheons besides that of having something good to eat and having conversation with old friends.

At the last luncheon Fuzzy Butler '21, in the absence of Allen Gould '10, gave the review on current affairs. The luncheons are ordinarily very well attended, for, in addition to the summary of current events at Technology, a short talk of from ten to fifteen minutes duration is given by some Alumnus on his own particular work. Edwin Motch '97, of the firm of Motch and Merryweather, spoke briefly regarding his polo ponies and the higher expense of up-keep of polo ponies as compared with automobiles. He proved conclusively that the maintenance of four polo ponies was greater than the maintenance of four automobiles. George Merryweather '96 of the same firm supported Mr. Motch in his statements.

Again we take the opportunity of inviting all Technology Alumni, when in Cleveland on the first Friday of the month, to visit us at our luncheon. — LAURENCE B. DAVIS '22, *Secretary*, Cities Service Oil Company, 4614 Prospect Avenue, Cleveland, Ohio.

Washington Society of the M. I. T.

The annual meeting of the Washington Society of the M. I. T. was held at the University Club, Washington, D. C., Friday, December 28, 1928. Officers for 1929 were elected as follows: President, Alfred E. Hanson '14; Vice-President, John R. Freeman Jr. '16; Secretary, Kenneth P. Armstrong '10; Treasurer, Charles H. Godbold '98. Plans were formulated for the annual banquet to be held at the Wardman Park Hotel early in February.

Several undergraduates of the Institute who were home for the holidays were present as invited guests. — KENNETH P. ARMSTRONG '10, *Secretary*, 2002 Rhode Island Avenue, N. E., Washington, D. C.

Technology Club of Mexico

The Technology Club of Mexico City, at a meeting held on November 28, re-elected Ygnacio S. Bonillas '08 as President of the Club, and Felix de Martino '22 was elected Secretary-Treasurer. Manuel S. Vallarta '21 was reelected as Council Representative. The meetings of the Club are held at the University Club on the second Friday of every month at 7 P.M. — FELIX DE MARTINO '22, *Secretary*, Apartado Postal 1911, Mexico, D. F.

Technology Association of Northern California

No meeting of this group had been held since the Secretary, Dick Aaron '22, left for Singapore over six months ago. J. E. Woodbridge '93, the President of the Club decided to try resuscitation recently and appointed John K. Heller '16 to act as Secretary, with instructions to apply the prone pressure method to the body and attempt to revive it. Ninety cards were sent out announcing a get-together meeting for Tuesday noon, January 22. Fourteen Alumni representing thirteen different classes ranging from '88 to '24 put in an appearance and enthusiastically voted to continue the meetings. An attempt was made to connect with Professor Jaggar, the noted volcanologist of Hawaii and a former member of the Institute faculty, to have him present at the meeting. Because of conflicting dates this attempt failed. A similar attempt to reach Professor McKibben '94 failed for a like reason.

The next meeting was scheduled for February 26 at the Engineers Club in San Francisco. J. E. Woodbridge will, at that time, unburden his mind relative to the difficulties encountered and overcome in building a steam turbine generating plant of 15,000 k.v.a. capacity in Western Texas within three months. — JOHN K. HELLER '16, *Secretary*, Ford, Bacon and Davis, Inc., 58 Sutter Street, San Francisco, Calif.

The Technology Club of Rochester

It is my sad duty to report the death of James H. Haste '96, on January 7, 1929. Mr. Haste was one of the most revered

and loved members of The Technology Club of Rochester and his death is a great loss to us. For thirty-two years he has been with the Eastman Kodak Company, and for the last twenty-two years he has been manager of the Kodak Park plant of the Company, and under his managership it grew enormously to one of the most modern factories in the world, employing about 6,500 people. The Technology Club of Rochester has adopted a resolution of sympathy upon the death of Mr. Haste.

On Saturday, December 28, 1928, the Club had its annual Christmas luncheon in honor of the undergraduates at the Institute from this district. A very successful luncheon meeting was held at the Rochester Club at which forty-seven men were present, fifteen of these being undergraduates.

The Club is actively engaged at present in a campaign to raise \$400 for the continuance of the freshman scholarship at the Institute. We have bought all the seats at one of the local theaters for the performance on Monday, January 21, and the sale of these tickets is going so successfully that it looks as if we might make a net profit of about \$1,000. A more complete report of this project will be made later. — HENRY R. COUCH '20, *Secretary*, 126 Albemarle Street, Rochester, N. Y.

Atlanta Association of the M. I. T.

Twenty-seven members, wives, and guests of the Atlanta Alumni Association of the M. I. T. assembled at the Piedmont Driving Club on the evening of February 6 for the annual formal dinner of the Association. The guest of honor was Dr. James L. Tryon, Director of Admissions of the Institute.

The dinner itself, thanks to the efforts of William E. Huger, Jr. '22, Chairman of the Dinner Committee, was a triumph of southern cooking; so much so that at the business meeting that followed, with President Rawson Collier in the chair, Mr. Huger was elected President for the coming year, in spite of determined opposition from a few dyspeptics who favored the past incumbent. Other officers elected after heated discussion were: Vice-President, W. Rawson Collier '00; Secretary and Treasurer, Richard W. Smith '21; and Master-at-Arms, Charles L. Gaines '26.

Reports were heard from the chairman of committees appointed at the previous meeting. Frederick W. Hadley '93, Chairman of the Co-ed Committee, reported that after long and diligent search, un-

aided by his wife, he was unable to find a single co-ed in Greater Atlanta to bring to the dinner, but that he had discovered some very promising prospects who, if sent to the Institute, would do much to raise the standards of co-ed pulchritude. He asked to be reappointed to the same committee for the coming year. Charles A. Smith '99, chairman of the committee appointed in 1928 to assist, aid, and abet Harold C. McLaughlin '18, called attention to the fact that McLaughlin for the fifth consecutive year had brought the same young lady to the annual dinner, and stated that it was the opinion of the committee that their assistance had been of no avail principally because of the number of speeches that McLaughlin insisted on making at the dinners.

At the close of the business meeting, Dr. Tryon talked of the recent changes and progress at the Institute, and of his work in traveling over the country to interest worthy young men in entering the school. The party ended with a rising vote of appreciation of Dr. Tryon's work and of rejoicing that a Harvard graduate could have found such a useful mission. — RICHARD W. SMITH '21, *Secretary*, State Geological Survey, Atlanta, Ga.

Southwestern Association of M. I. T.

We were fortunate in having Frank P. McKibben '94 as our guest at our meeting on January 9 at the University Club in Kansas City. Professor McKibben, who was formerly on the staff of the Department of Civil Engineering at Technology, is now with the General Electric Company as consulting engineer in their structural welding division. He gave a very interesting talk on recent developments in welding. The meeting was well attended, and several visitors were present who were interested in welding.

A. C. Willard '04, Professor of Heating and Ventilating Engineering at the University of Illinois, and President of the American Society of Heating and Ventilating Engineers, addressed the Kansas City Engineers Club and a meeting of the local section of the American Society of Heating and Ventilating Engineers on January 14. Members of our Association were present at both meetings.

Hermann C. Henrici '06 has been elected President of the Kansas City Boy Scout organization. — C. ELLSWORTH BROWN '20, *Secretary*, 402 Interstate Building, Kansas City, Mo.

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ARTIFICIAL COLD

(Concluded from page 268)

Another recent use of carbon dioxide snow is the carbon dioxide snow fire extinguisher. This is merely a tank of liquid carbon dioxide under pressure with a hose and nozzle connected so that when the valve is opened, carbon dioxide gas and snow will be delivered from the nozzle. This extinguisher is particularly effective on electrical fires, such as generators or telephone switchboards, because it will not conduct electricity and does not injure the electrical apparatus. It is also very effective on gasoline or oil fires. Since the gas is much heavier than air, the fire is smothered and the extremely low temperature of the snow cools the burning material below the ignition temperature.

IF AIR is compressed to some 3,000 pounds per square inch and then allowed to expand to atmospheric pressure, it is cooled approximately 50° F. With the aid of a regenerative coil, this cooled, expanded air can be forced into close contact with the high pressure air, thus cooling the high pressure air. If this process is continued, a point will soon be reached where the cooling effect will cause some of the escaping air to be cooled to the liquefaction temperature and liquid air can be collected at the bottom of the expansion coil. For some time after the discovery of the method of producing liquid air, the material was largely for laboratory use only, but now the commercial use has increased to such an extent that there is scarcely a large sized city that does not have at least one liquid air plant in operation. In the modern plants, the expanding air operates a compressor, thus increasing the efficiency over the earlier laboratory methods.

Air contains roughly 20 per cent oxygen and 80 per cent nitrogen, but the boiling point of nitrogen is 320° F. below zero while oxygen boils at only 297° F. below zero. Due to this difference in boiling temperatures the nitrogen tends to vaporize first and it is possible to separate these two substances by fractional distillation in much the same way as gasoline is separated from crude oil, but no external heat is required to boil liquid air because the normal boiling point is about 310° F. below zero.

Liquid air is also used in high vacuum work and is used for the production of helium from natural gas in Texas. A prominent mining engineer states that 90 per cent of the explosive work in the mines in Mexico is carried out with liquid oxygen as the explosive rather than gun powder. If blotting paper is rolled up and saturated with liquid oxygen and then tamped into a drilled hole, it can be ignited electrically and an explosion similar to that of gunpowder will result.



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The Fatal Duel



In 1804, as part of an erratic plot by Federalist extremists to cut New England and New York from the Union, Aaron Burr, their complacent tool, was nominated for Governor of New York. Alexander Hamilton denounced Burr's motives in no uncertain terms. Then Burr, giving vent to an insensate jealousy dating back to the Revolution, when his own brilliance was out-dazzled by Hamilton's military, intellectual and social genius, eagerly challenged him. As *TIME* would have reported the Burr-Hamilton duel, had *TIME* been issued July 16, 1804:

... Hamilton spent the night putting his house in order. At dawn, he, his second (Nathaniel Pendleton) and one Dr. William Hosack, were rowed from Manhattan to the Weehawken Palisades. It was hot, hazy. The river's oily swell made Mr. Pendleton sick, so Hamilton humorously held his head. Landing, they sought the well-secluded dueling ground not far above the river.

Burr and his second (William Van Ness) were clearing the summer's underbrush. Hamilton and Burr nodded each to the other with a pleasant "Good morning." While the seconds conferred, Hamilton stood gazing across the Hudson, where his family lay still

asleep. He was remembering his son's death on this very spot three years before at the hands of General Baker. Burr sat on a rock smoking a segar. Finally Pendleton asked: "Gentlemen, are you ready?" Burr rose. His beady eyes sparkled but his face was immobile. Pale but resolute, Hamilton took his post, his face a cameo against the green background. Pendleton handed each a loaded pistol. Again: "Gentlemen, are you ready?" "Present!" both replied. Burr fired on the instant. Hamilton rose slowly to his toes, clenched his hands, so unwittingly discharging his pistol, and fell heavily face downward. His bullet flew over Burr's head, clipped a cedar twig which fluttered to his shoulder.

Hamilton, agonizing, was carried to his boat. He murmured: "Take good care of that pistol. It's undischarged. Pendleton knows I didn't intend to fire..."

So, in part, *TIME* would have reported the fatal duel, noting also how Hamilton died the next day at the Greenwich Village home of William Bayard, how his burial in Trinity churchyard was a signal for an unprecedented outpouring of public grief. *TIME* too would have shown how the duel brought Burr's political ruin in the East, turned his schemes toward Louisiana and Mexico.

Cultivated Americans, impatient with cheap sensationalism and windy bias, turn increasingly to publications edited in the historical spirit. These publications, fair-dealing, vigorously impartial, devote themselves to the public weal in the sense that they report what they see, serve no masters, fear no groups.

TIME

The Weekly Newsmagazine

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CALENDAR SIMPLIFICATION

(Continued from page 270)

From all practical points of view the calendar should be changed as proposed on January 1, 1933. This is the first forthcoming year in which Sunday falls on January 1. Any inconveniences due to legal and other matters could be quickly adjusted by special provision, and in a short time the world would be wondering why so simple and advantageous a change had not been effected centuries before.

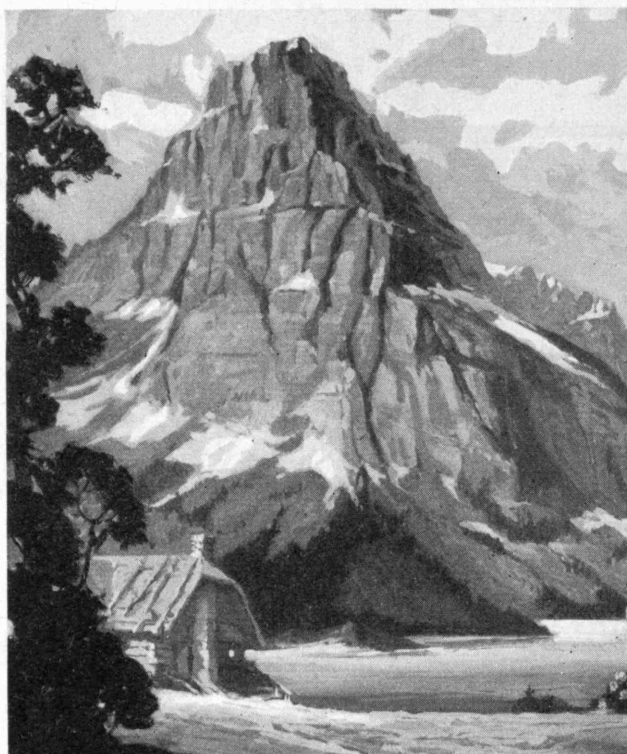
With this date drawing near, agitation regarding calendar reform has taken definite form in a bill introduced by Congressman Stephen G. Porter of Pennsylvania on December 5, 1928. This was joint resolution Number 334, reading as follows:

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, that the President is respectfully requested to propose, on behalf of the United States, to the nations of the world the calling of an international conference for the simplification of the calendar, or to accept an invitation on behalf of the United States to participate in such a conference upon the proposal of some other nation or group of nations.

This bill was referred back to the Committee on Foreign Relations, of which Mr. Porter of Pennsylvania is Chairman and hearings are still being given.

BUSINESS and financial services have grown to be of inestimable help to the business man of today. To be comparable and accurate the statistics collected by these services should cover similar periods without the need of adjustment for variations.

The proposed calendar creates periods of time for which statistics can be gathered that will be comparable, one month with another. The Graton and Knight Company of Worcester, Mass., have used this calendar in their accounting and financial records since January 1, 1918. In that period of eleven years there has been no objection to its use and no inconvenience has been caused to the company or its employees. On the other hand, many advantages have resulted from its use. The executive and sales department payroll, formerly figured and paid monthly, is now being paid on a four-week basis. The employees under these classifications are paid on a yearly basis, and it is simple enough to divide their yearly rate by thirteen instead of twelve, in order to determine the amount due them every four weeks. *(Continued on page 316)*



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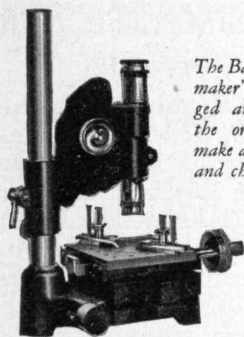
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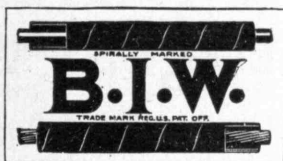
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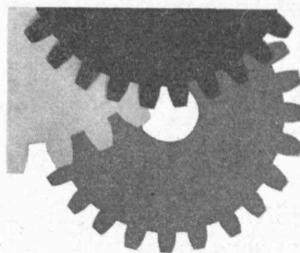
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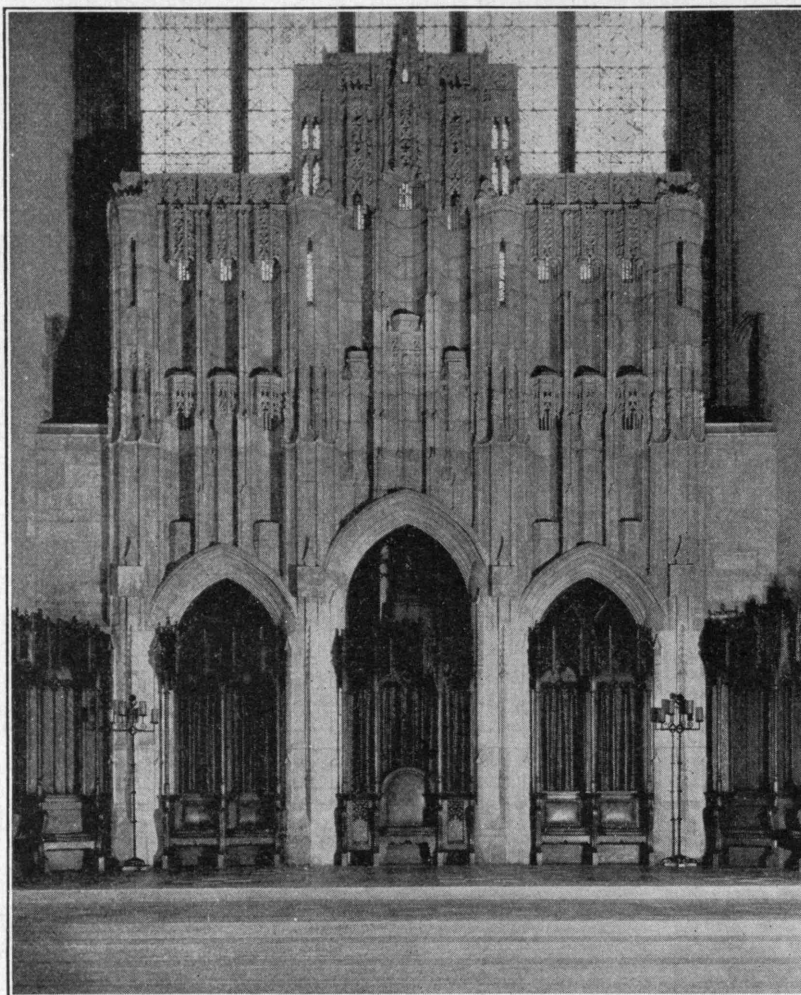
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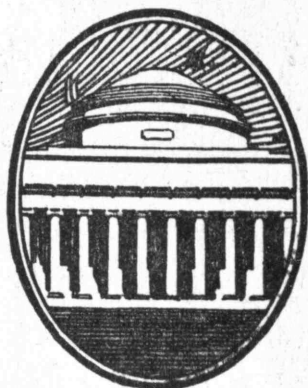


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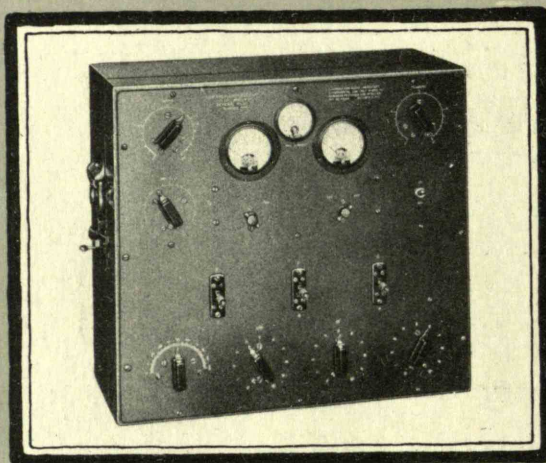
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